TOSHIBA

Leading Innovation

FIXED SPEED

RAS-10, 18SKHP-ES &
RAS-13, 24SKHP-ES2

Engineering Databook

TCTC 09-004

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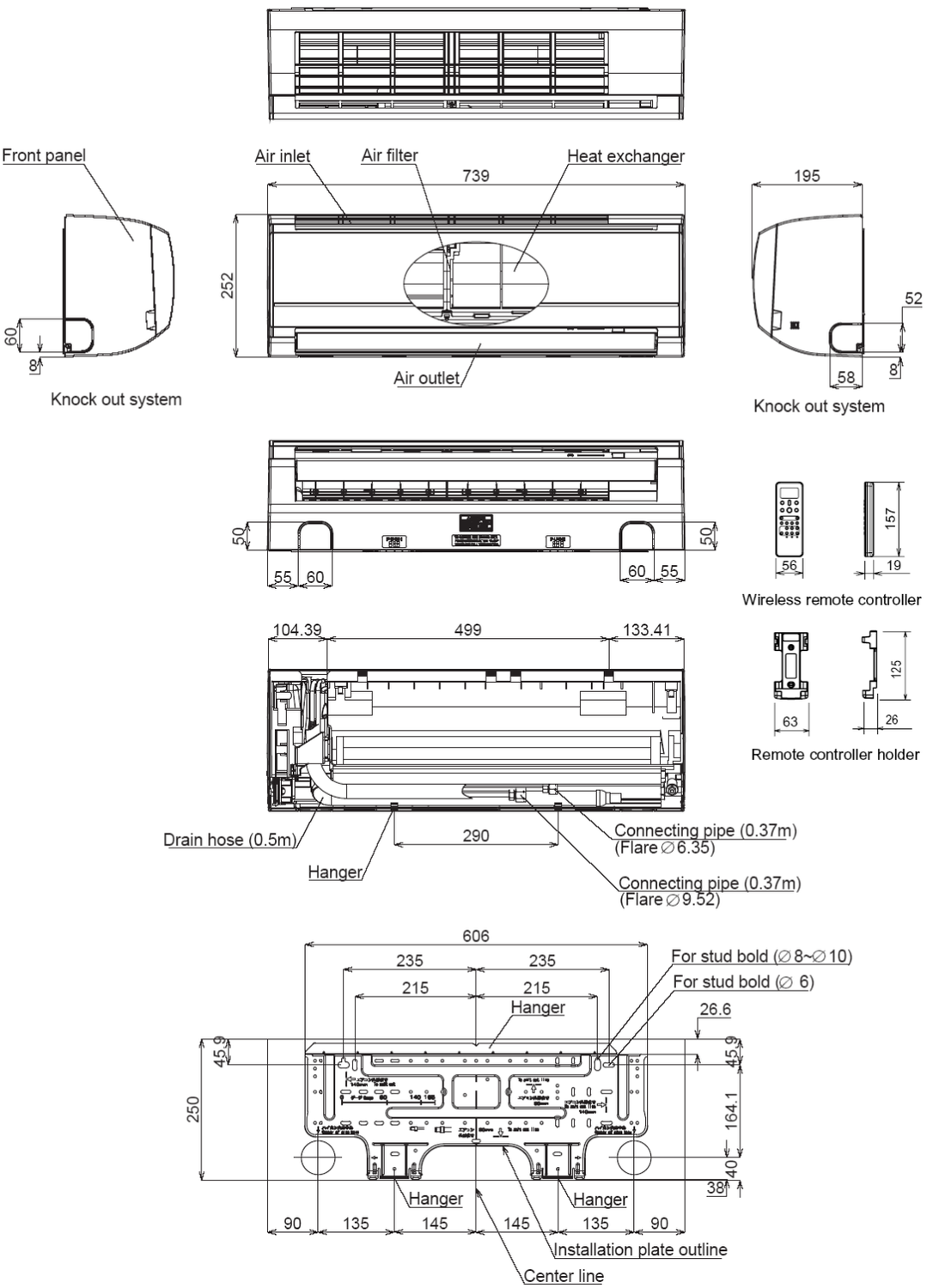
Specifications

			Technical specifications **Heat Pump**			
Outdoor unit			**RAS-10S2AH-ES**	**RAS-13S2AH-ES2**	**RAS-18S2AH-ES**	**RAS-24S2AH-ES2**
Indoor unit			**RAS-10SKHP-ES**	**RAS-13SKHP-ES2**	**RAS-18SKHP-ES**	**RAS-24SKHP-ES2**
Cooling capacity	kW		2.73	3.75	5.11	6.80
Power input (min. -rated - max)	kW	C	0,83-0,84-0,85	1,14-1,17-1,19	1,54-1,55-1,58	2,03-2,05-2,10
EER	W/W		3.25	3.21	3.30	3.32
Energy efficiency class		C	A	A	A	A
Annual energy consumption	KWh		420	585	775	1025
Heating capacity	kW		2.94	4.20	5.49	7.30
Power input (min. -rated - max)	kW	H	0,79-0,81-0,82	1,14-1,16-1,18	1,47-1,50-1,53	1,93-1,96-2,05
COP	W/W		3.63	3.62	3.66	3.72
Energy efficiency class		H	A	A	A	A
Indoor unit			**RAS-10SKHP-ES**	**RAS-13SKHP-ES2**	**RAS-18SKHP-ES**	**RAS-24SKHP-ES2**
Air Flow (max)	m3/h - l/s	C	510 - 142	600 - 167	1000 - 278	1240 - 344
Sound pressure level (l/m/h)	dB(A)	C	31/35/39	31/35/41	35/39/44	40/46/50
Sound power level (h)	dB(A)	C	52	54	57	63
Air Flow (max)	m3/h - l/s	H	560 - 156	620 - 172	1000 - 278	1240 - 344
Sound pressure level (l/m/h)	dB(A)	H	31/35/39	31/35/41	35/39/44	40/46/50
Sound power level (h)	dB(A)	H	52	54	57	63
Dimensions (h x w x d)	mm		250 x 740 x 195	275 x 790 x 205	320 x 1050 x 228	320 x 1050 x 228
Weight	kg		8.0	9.0	13.0	14.0
Outdoor unit			**RAS-10S2AH-ES**	**RAS-13S2AH-ES2**	**RAS-18S2AH-ES**	**RAS-24S2AH-ES2**
Air Flow	m3/h - l/s		2090 - 581	2160 - 600	2475 - 688	4100 - 1139
Sound pressure level (h)	dB(A)	C	48	51	57	57
Sound power level (h)	dBA	C	61	64	70	70
Operating range	°C	C	15-43	15-43	15-43	15-43
Sound pressure level (h)	dB(A)	H	48	51	58	58
Sound power level (h)	dBA	H	61	64	71	71
Operating range	°C	H	-10/24	-10/24	-10/24	-10/24
Dimensions (h x w x d)	mm		550 x 780 x 290	550 x 780 x 290	715 x 780 x 290	890 x 900 x 320
Weight	kg		31	34	47	64
Compressor type			Rotary	Rotary	Rotary	Rotary
Flare connection						
Gas	in		3/8	1/2	1/2	1/2
Liquid	in		1/4	1/4	1/4	1/4
Minimum pipe length	m		2	2	3	3
Maximum pipe length	m		10	15	20	25
Maximum height difference	m		5	6	8	10
Chargeless pipe length	m		10	15	15	15
Power supply	V-ph-Hz		220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Filter			Toshiba New IAQ Filter x 2		Toshiba New IAQ Filter x 4	

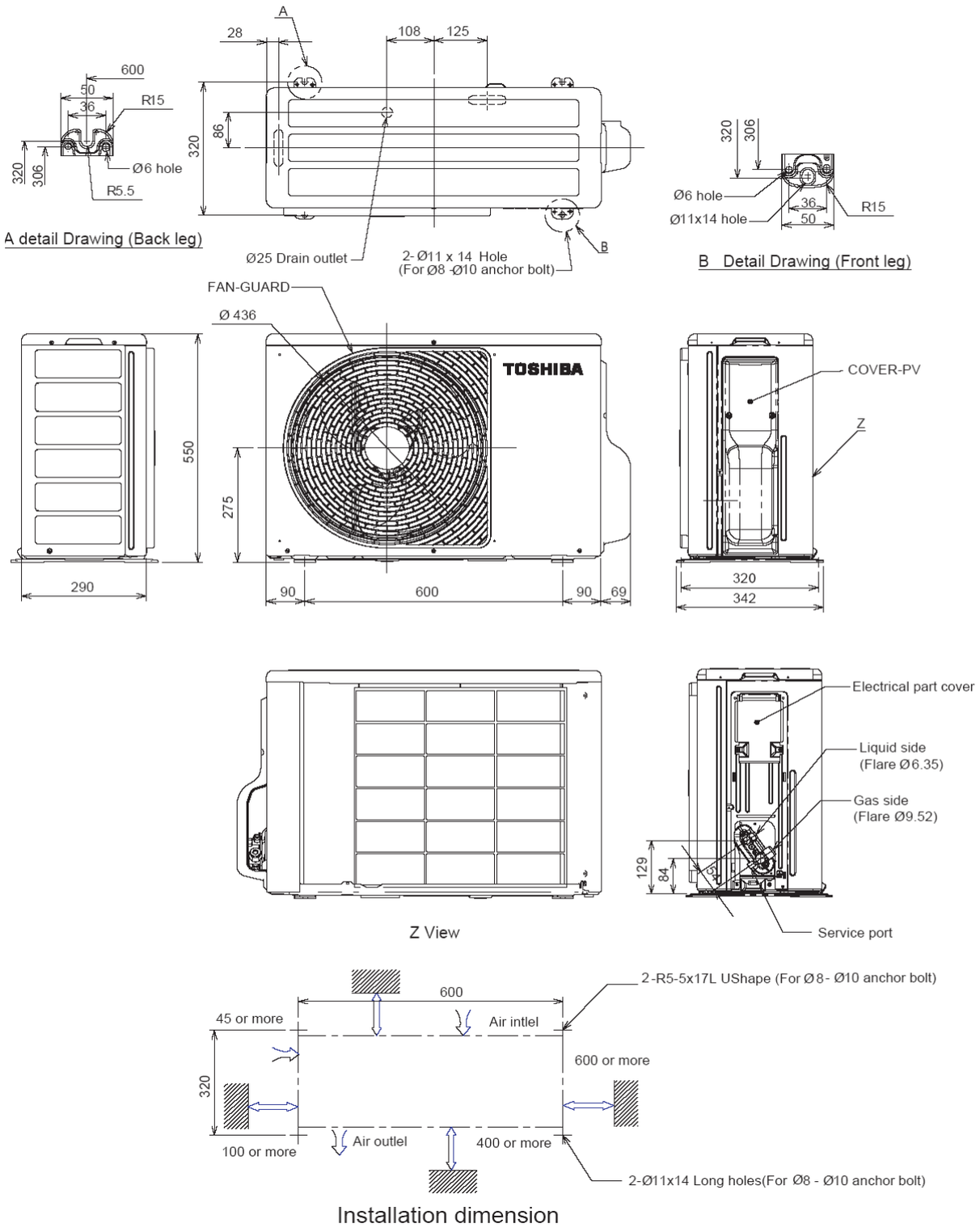
C = cooling mode
H = heating mode

Dimensions of Indoor and outdoor units

Indoor Unit: RAS-10SKHP-ES

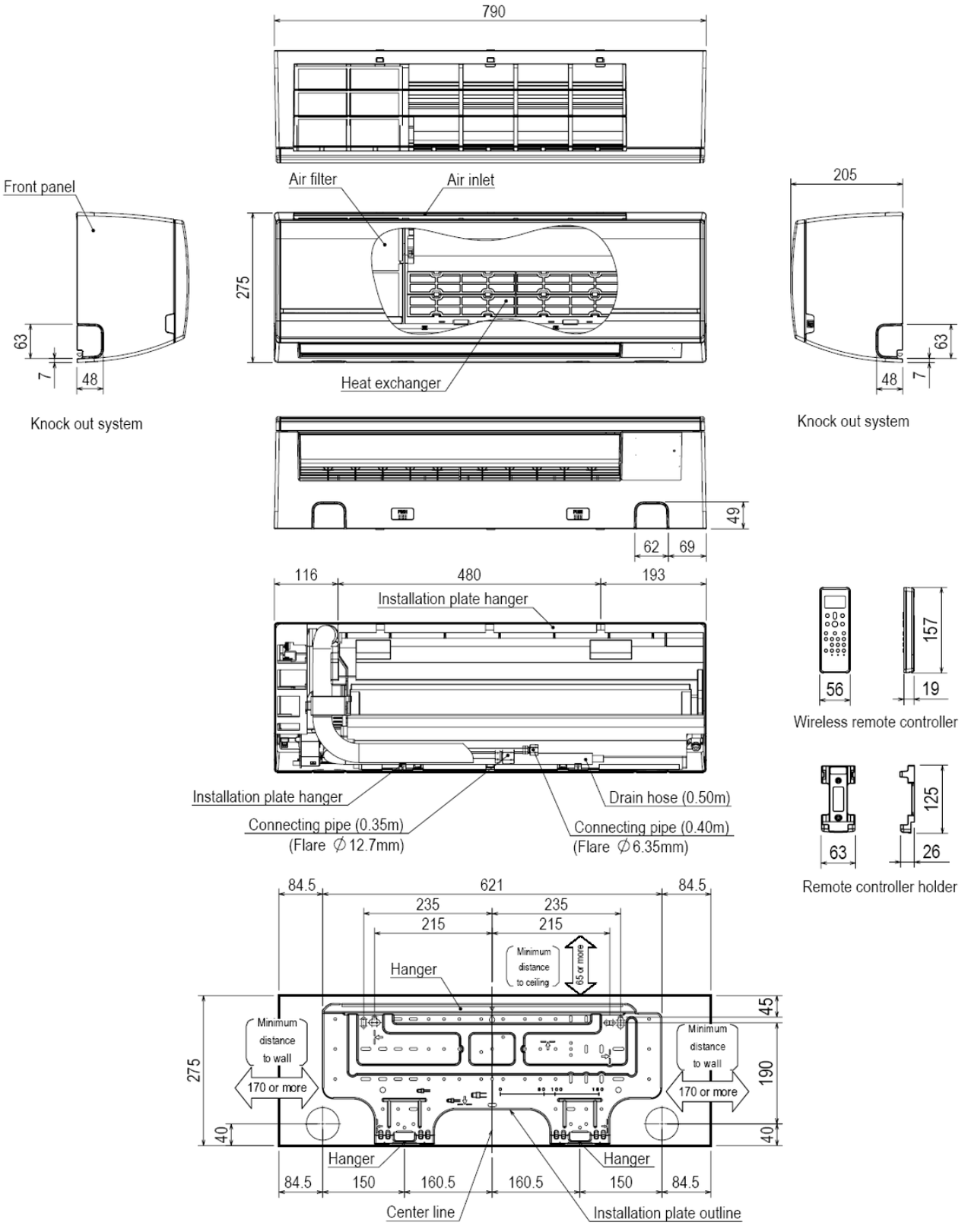


Outdoor Unit: RAS-10S2AH-ES

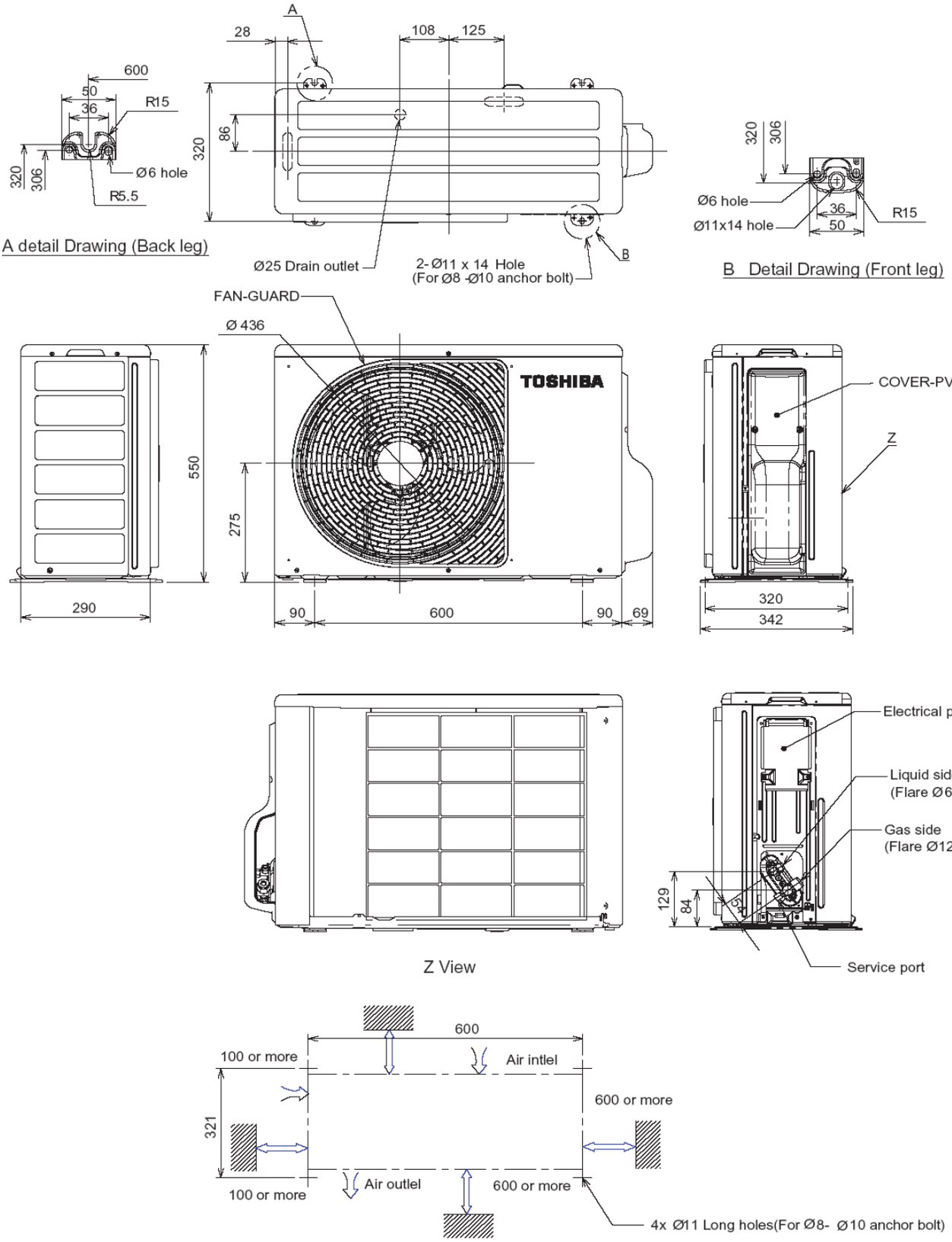


Installation dimension

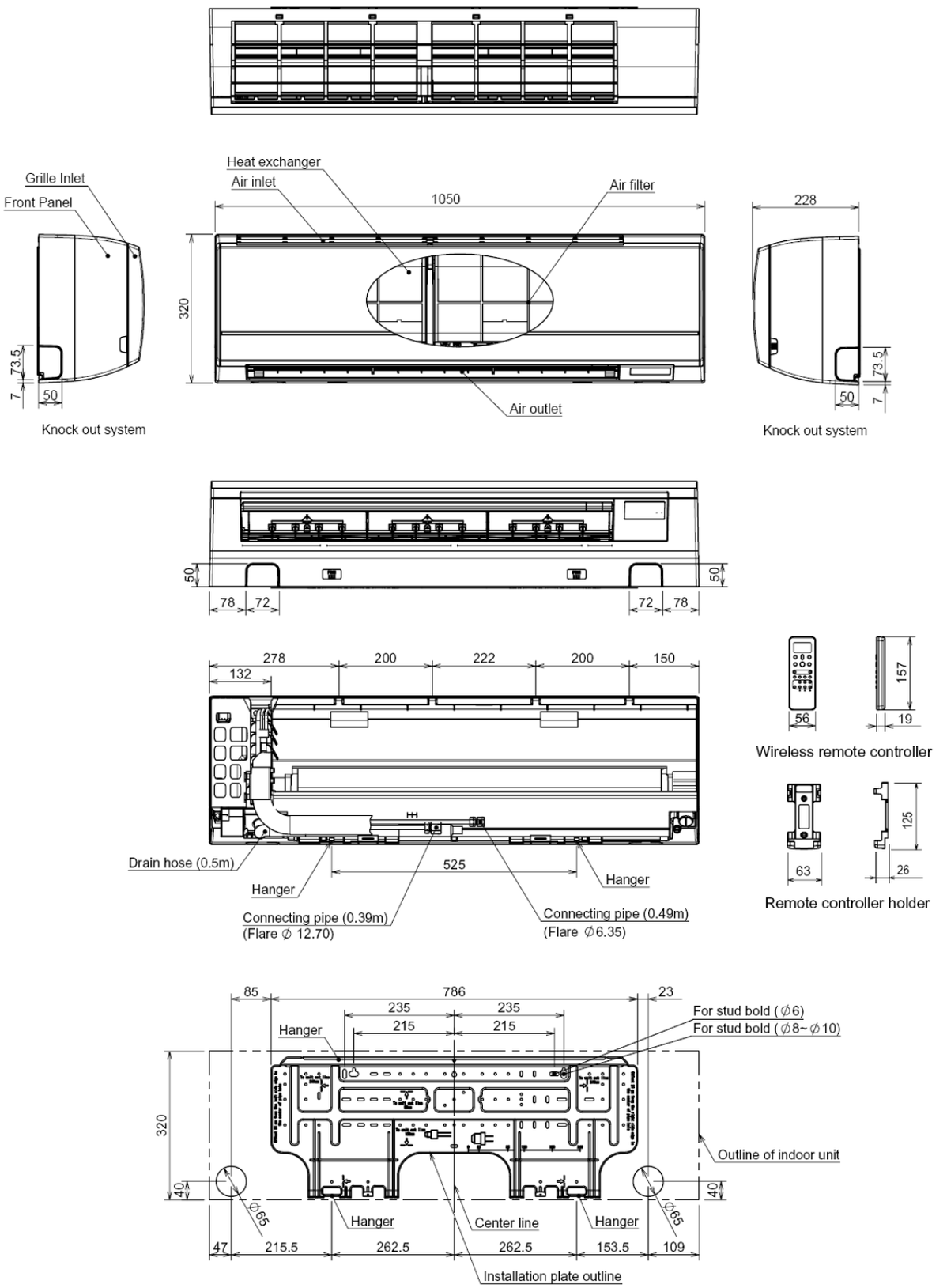
Indoor Unit: RAS-13SKHP-ES2



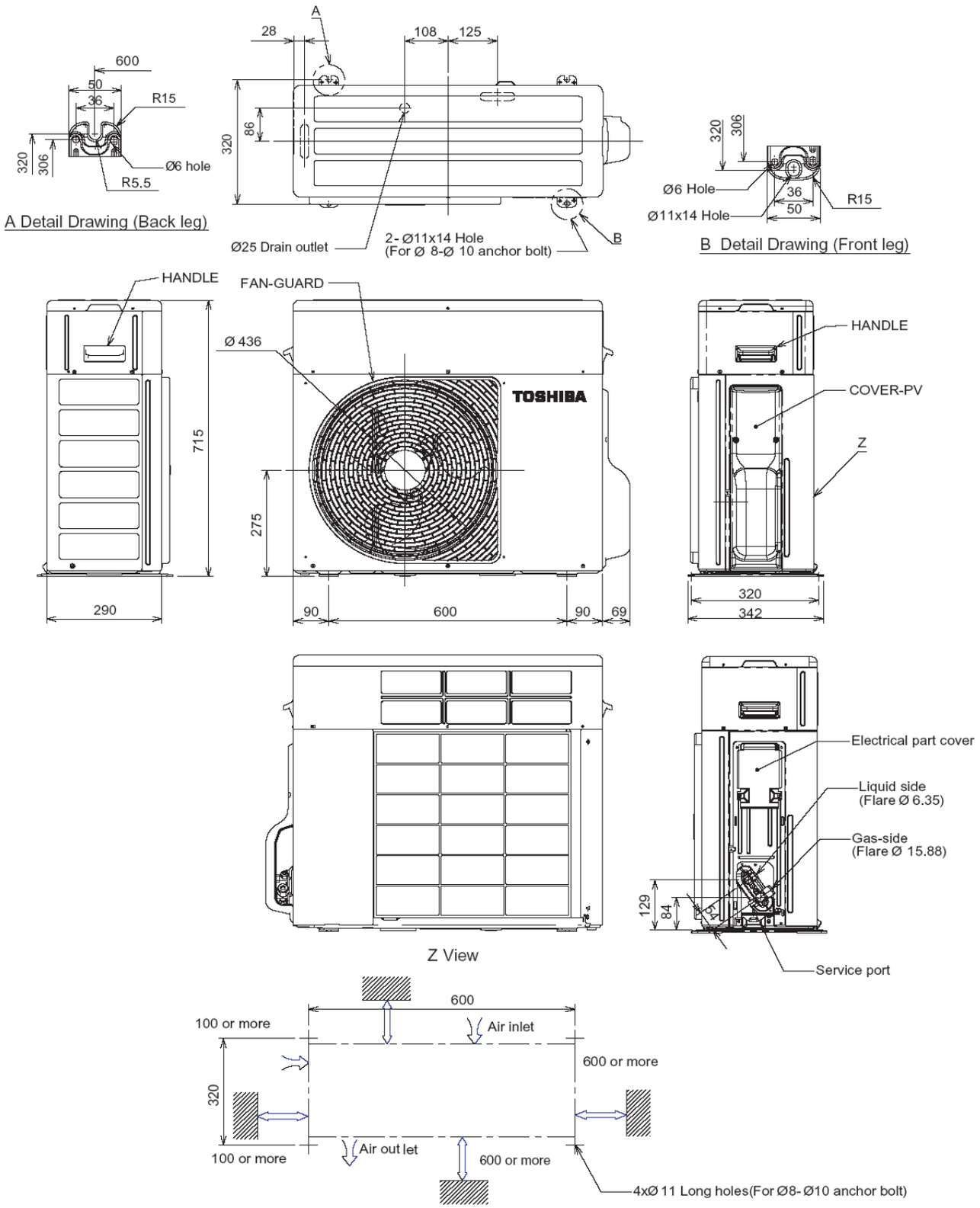
Outdoor Unit: RAS-13S2AH-ES2



Indoor Unit: RAS-18SKHP-ES

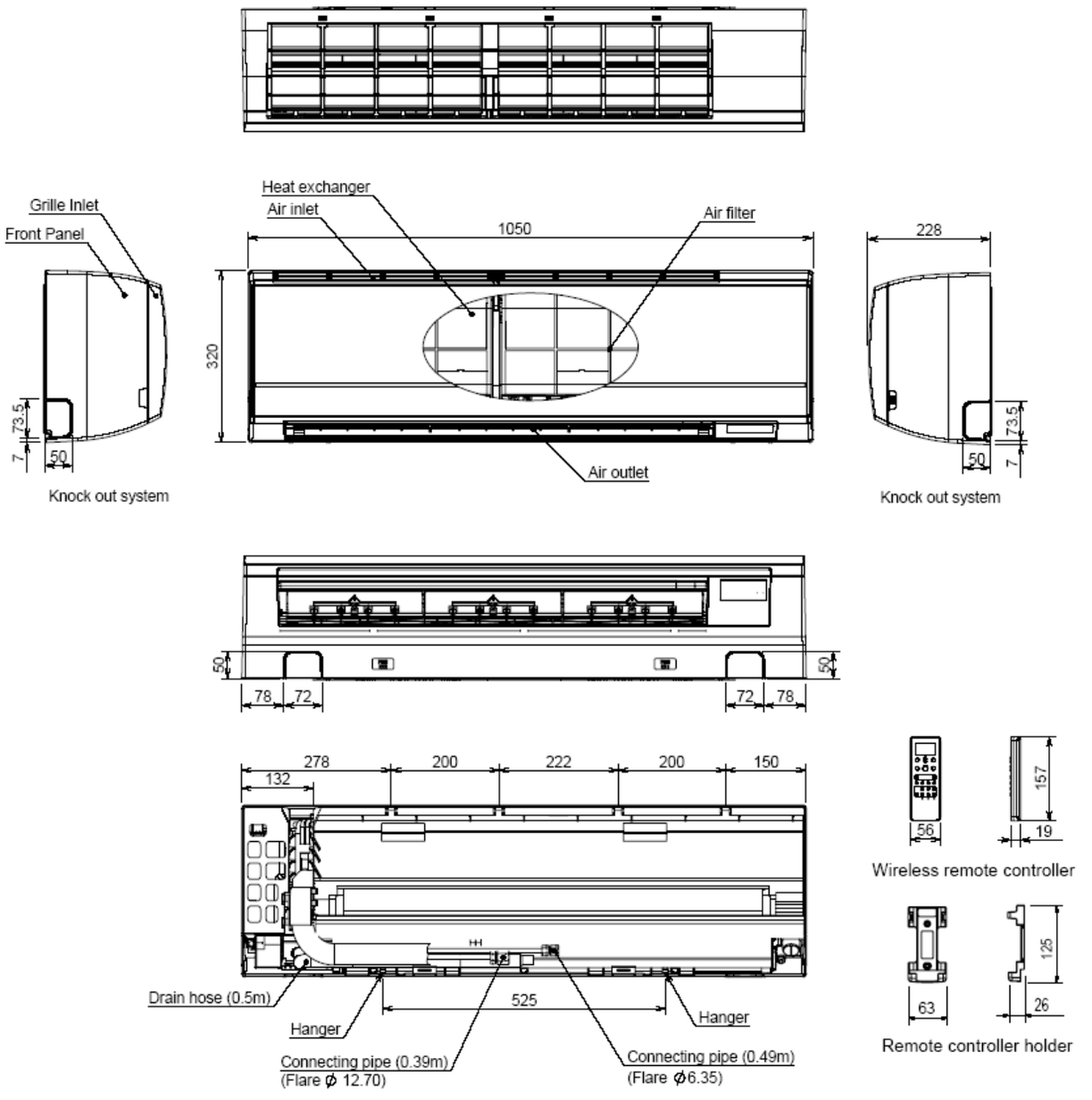


Outdoor Unit: RAS-18S2AH-ES

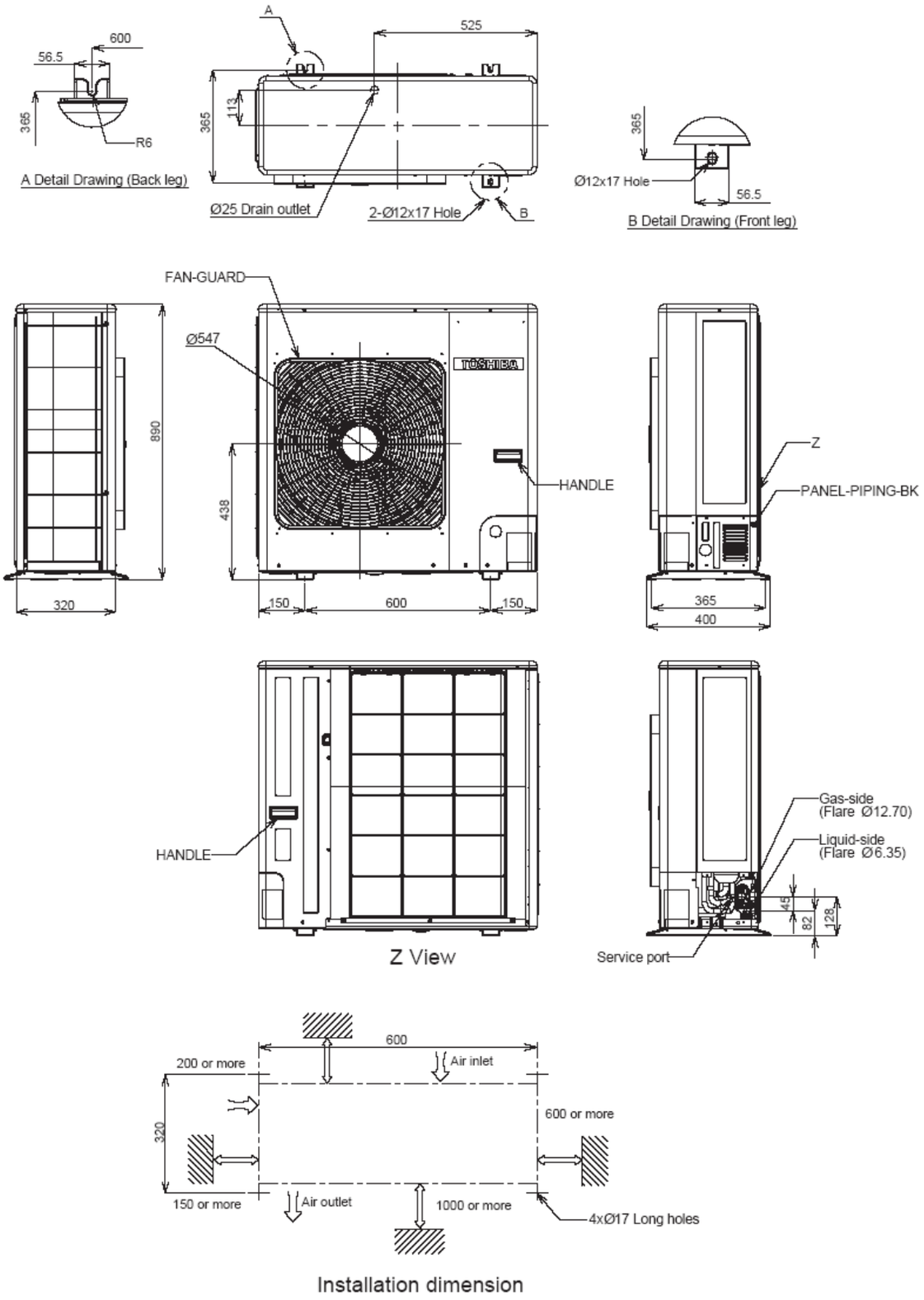


Installation dimension

Indoor Unit: RAS-24SKHP-ES2

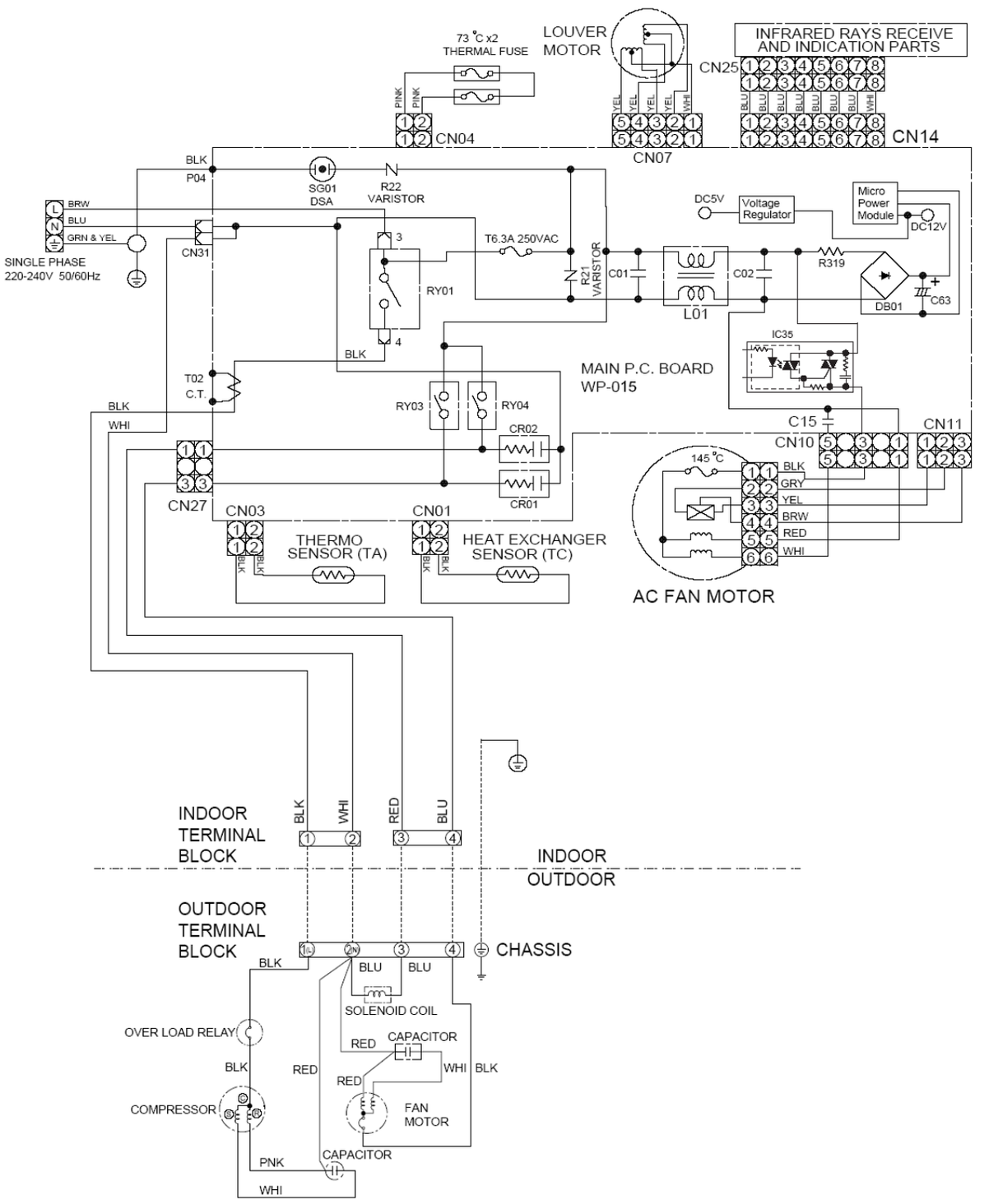


Outdoor Unit: RAS-24S2AH-ES2



Wiring Diagram

RAS-10SKHP-ES / RAS-10S2AH-ES



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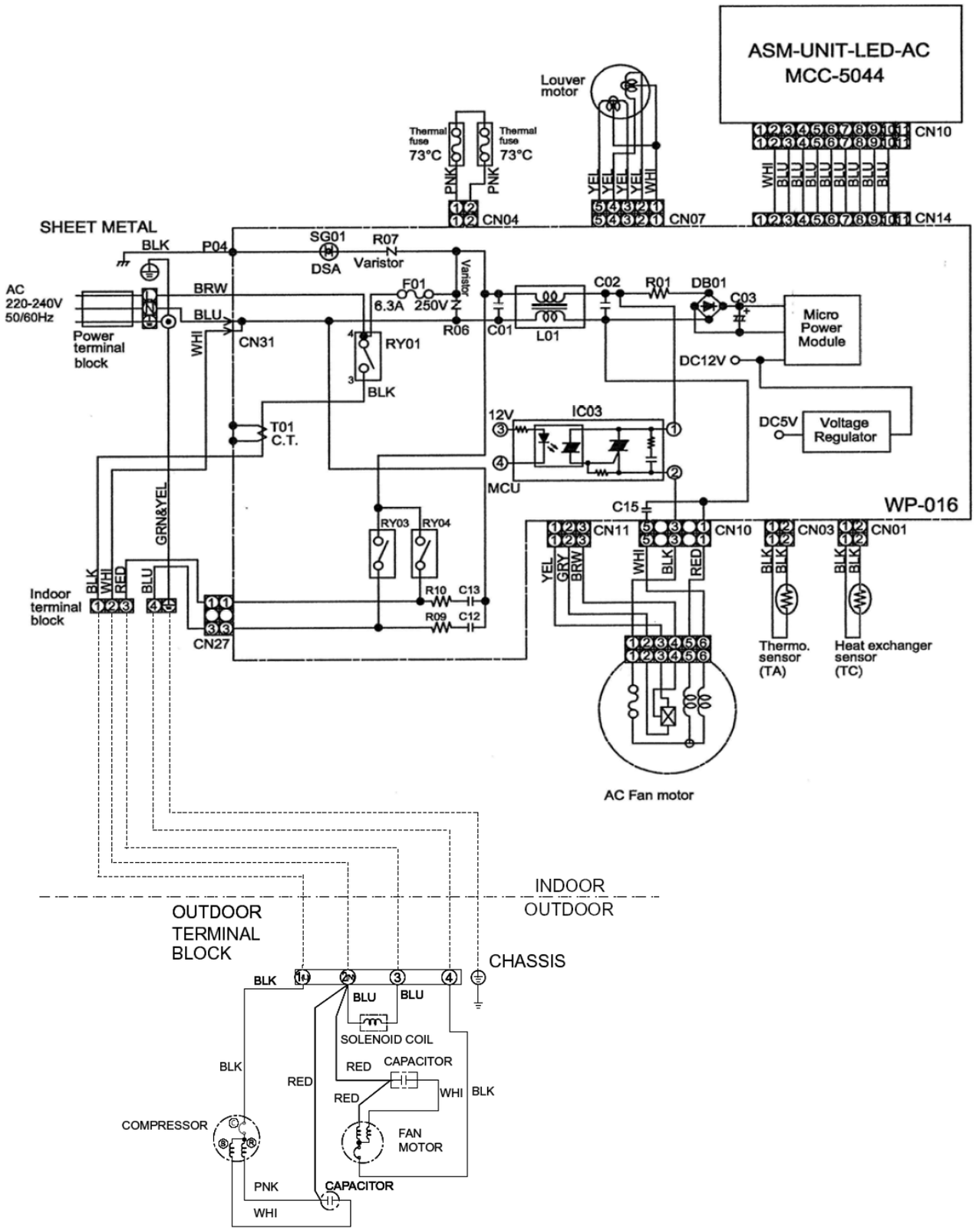
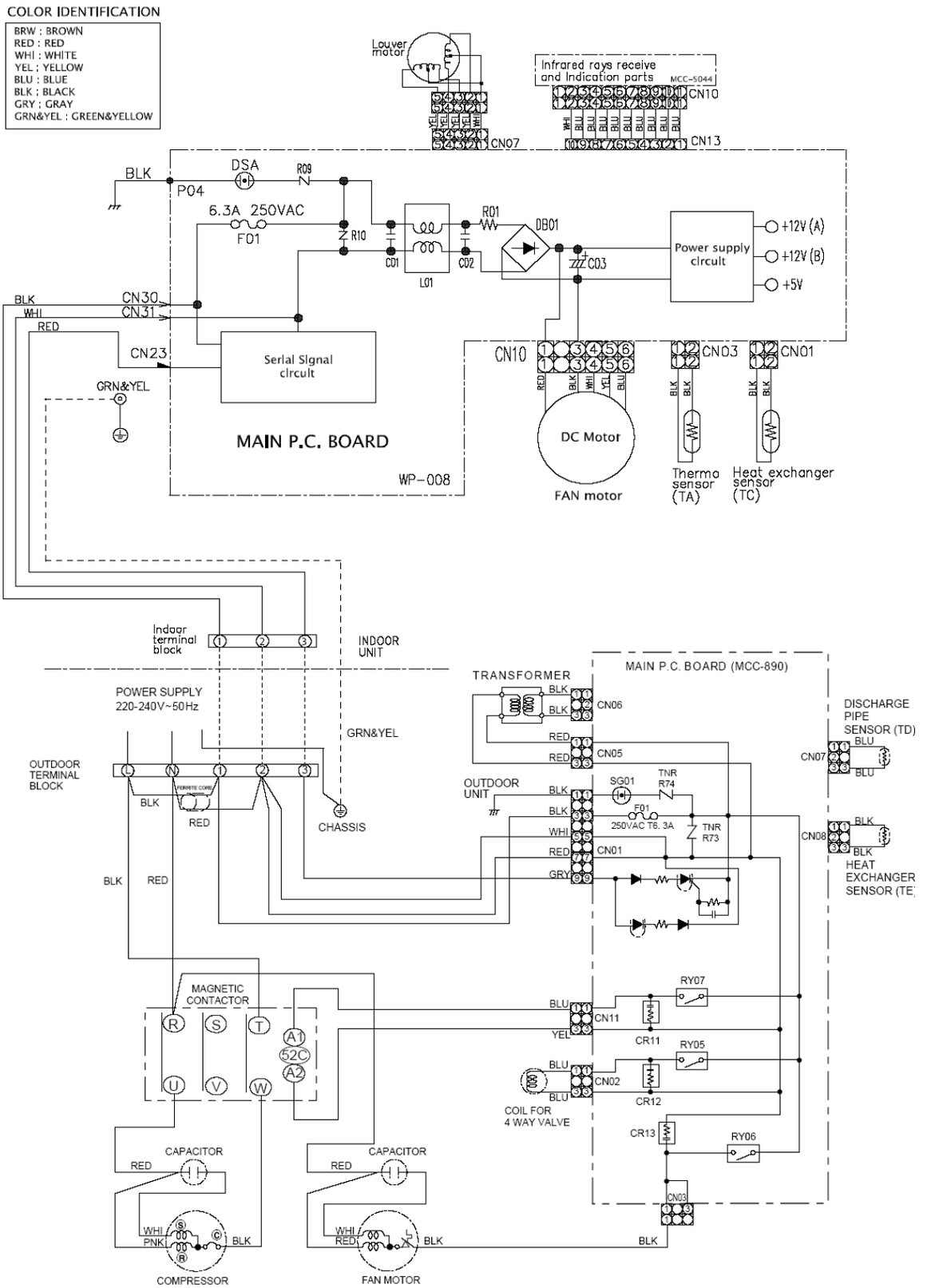
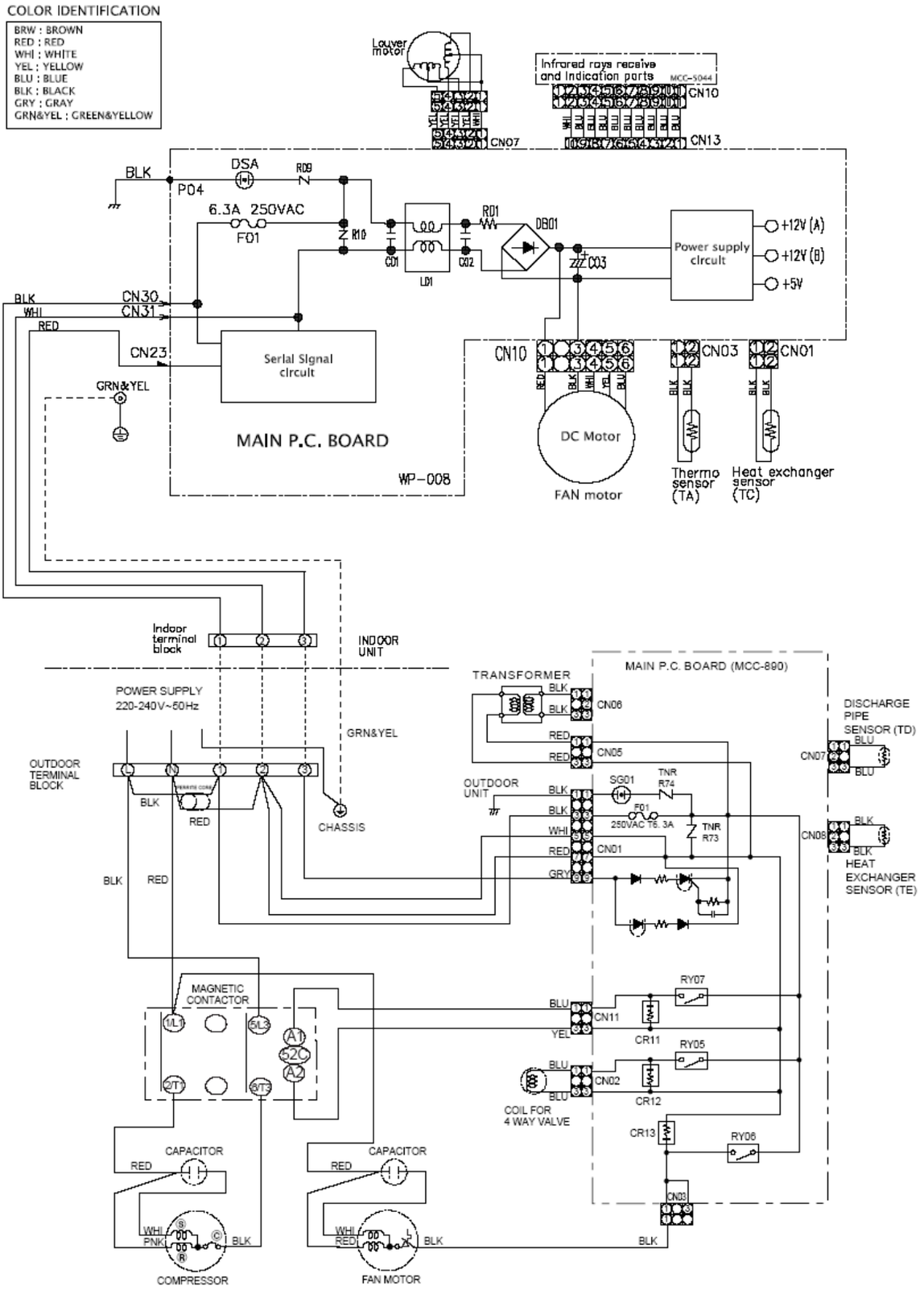


RAS-18SKHP-ES / RAS-18S2AH-ES



RAS-24SKHP-ES2 / RAS-24S2AH-ES2



Sensible Capacity Table

Trend of Total & Sensible Heat Capacity / Indoor Air & Outdoor Air temperature.

Product models : RAS-10SKHP-ES / RAS-10S2AH-ES

Specification of product at standard condition.

Standard Condition

Indoor	27°CDB / 19°CWB
Outdoor	35°CDB / 24°CWB

Total Cooling Capacity (TC)	2.73 kW
Sensible Heat Capacity (SHC)	2.09 kW

Outdoor air temp. CDB	Indoor air temp. 14.0CWB 20.0CDB		16.0CWB 23.0CDB		18.0CWB 26.0CDB		19.0CWB 27.0CDB		20.0CWB 28.0CDB		22.0CWB 30.0CDB		24.0CWB 32.0CDB	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
21.0	2.452	2.178	2.707	2.325	2.899	2.472	2.985	2.470	3.070	2.471	3.251	2.454	3.400	2.413
23.0	2.398	2.131	2.648	2.274	2.836	2.418	2.920	2.416	3.003	2.417	3.180	2.401	3.326	2.360
25.0	2.345	2.083	2.589	2.223	2.773	2.364	2.855	2.363	2.936	2.364	3.110	2.347	3.252	2.308
27.0	2.291	2.036	2.531	2.173	2.710	2.311	2.790	2.309	2.870	2.310	3.039	2.294	3.178	2.255
29.0	2.238	1.988	2.472	2.122	2.647	2.257	2.725	2.255	2.803	2.256	2.968	2.240	3.104	2.203
31.0	2.185	1.941	2.413	2.072	2.584	2.203	2.660	2.201	2.736	2.202	2.897	2.187	3.030	2.150
33.0	2.131	1.894	2.354	2.021	2.521	2.149	2.595	2.148	2.669	2.148	2.827	2.134	2.956	2.098
35.0	2.078	1.846	2.295	1.971	2.458	2.095	2.530	2.094	2.602	2.095	2.756	2.080	2.882	2.045
37.0	2.025	1.799	2.236	1.920	2.395	2.042	2.465	2.040	2.536	2.041	2.685	2.027	2.808	1.993
39.0	1.971	1.752	2.177	1.869	2.331	1.988	2.400	1.986	2.469	1.987	2.614	1.973	2.734	1.940
41.0	1.918	1.704	2.118	1.819	2.268	1.934	2.335	1.933	2.402	1.933	2.544	1.920	2.660	1.888
43.0	1.865	1.657	2.059	1.768	2.205	1.880	2.270	1.879	2.335	1.880	2.473	1.867	2.586	1.835

Trend of Total & Sensible Heat Capacity / Indoor Air & Outdoor Air temperature.

Product models : RAS-13SKHP-ES2 / RAS-13S2AH-ES2

Specification of product at standard condition.

Standard Condition

Indoor	27°CDB / 19°CWB
Outdoor	35°CDB / 24°CWB

Total Cooling Capacity (TC)	3.75 kW
Sensible Heat Capacity (SHC)	2.88 kW

Outdoor air temp. CDB	Indoor air temp. 14.0CWB 20.0CDB		16.0CWB 23.0CDB		18.0CWB 26.0CDB		19.0CWB 27.0CDB		20.0CWB 28.0CDB		22.0CWB 30.0CDB		24.0CWB 32.0CDB	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
21.0	3.634	3.008	4.013	3.202	4.297	3.403	4.424	3.393	4.550	3.387	4.819	3.345	5.040	3.270
23.0	3.555	2.943	3.925	3.133	4.204	3.329	4.328	3.319	4.451	3.313	4.714	3.272	4.930	3.199
25.0	3.476	2.877	3.838	3.063	4.110	3.255	4.231	3.245	4.352	3.239	4.609	3.200	4.821	3.128
27.0	3.396	2.812	3.751	2.993	4.017	3.181	4.135	3.172	4.253	3.166	4.504	3.127	4.711	3.057
29.0	3.317	2.746	3.664	2.924	3.923	3.107	4.039	3.098	4.154	3.092	4.399	3.054	4.601	2.986
31.0	3.238	2.681	3.576	2.854	3.830	3.033	3.943	3.024	4.055	3.018	4.295	2.981	4.492	2.915
33.0	3.159	2.615	3.489	2.784	3.736	2.959	3.846	2.950	3.956	2.945	4.190	2.909	4.382	2.844
35.0	3.080	2.550	3.402	2.714	3.643	2.885	3.750	2.876	3.857	2.871	4.085	2.836	4.272	2.772
37.0	3.001	2.484	3.314	2.645	3.549	2.811	3.654	2.802	3.758	2.797	3.980	2.763	4.163	2.701
39.0	2.922	2.419	3.227	2.575	3.456	2.737	3.558	2.729	3.659	2.724	3.875	2.690	4.053	2.630
41.0	2.804	2.321	3.096	2.471	3.316	2.626	3.413	2.618	3.511	2.613	3.718	2.581	3.889	2.523
43.0	2.764	2.288	3.052	2.436	3.269	2.589	3.365	2.581	3.461	2.576	3.665	2.545	3.834	2.488

Trend of Total & Sensible Heat Capacity / Indoor Air & Outdoor Air temperature.

Product models : RAS-18SKHP-ES/RAS-18S2AH-ES

Specification of product at standard condition.

Standard Condition

Indoor	27°CDB / 19°CWB
Outdoor	35°CDB / 24°CWB

Total Cooling Capacity (TC)	5.11 kW
Sensible Heat Capacity (SHC)	4.20 kW

Outdoor air temp. CDB	Indoor air temp. 14.0°CWB 20.0°CDB		16.0°CWB 23.0°CDB		18.0°CWB 26.0°CDB		19.0°CWB 27.0°CDB		20.0°CWB 28.0°CDB		22.0°CWB 30.0°CDB		24.0°CWB 32.0°CDB	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
21.0	4.95	4.37	5.47	4.66	5.86	4.96	6.03	4.95	6.20	4.96	6.57	4.92	6.87	4.83
23.0	4.84	4.28	5.35	4.56	5.73	4.85	5.90	4.85	6.07	4.85	6.42	4.81	6.72	4.73
25.0	4.74	4.18	5.23	4.46	5.60	4.74	5.77	4.74	5.93	4.74	6.28	4.70	6.57	4.62
27.0	4.63	4.09	5.11	4.36	5.47	4.64	5.63	4.63	5.80	4.63	6.14	4.60	6.42	4.52
29.0	4.52	3.99	4.99	4.26	5.35	4.53	5.50	4.52	5.66	4.52	5.99	4.49	6.27	4.41
31.0	4.41	3.90	4.87	4.16	5.22	4.42	5.37	4.42	5.53	4.42	5.85	4.38	6.12	4.31
33.0	4.31	3.80	4.75	4.05	5.09	4.31	5.24	4.31	5.39	4.31	5.71	4.28	5.97	4.20
35.0	4.20	3.71	4.64	3.95	4.96	4.20	5.11	4.20	5.26	4.20	5.57	4.17	5.82	4.10
37.0	4.09	3.61	4.52	3.85	4.84	4.10	4.98	4.09	5.12	4.09	5.42	4.06	5.67	3.99
39.0	3.98	3.51	4.40	3.75	4.71	3.99	4.85	3.98	4.99	3.99	5.28	3.96	5.52	3.89
40.0	**3.93**	**3.47**	**4.34**	**3.70**	**4.65**	**3.93**	**4.78**	**3.93**	**4.92**	**3.93**	**5.21**	**3.90**	**5.45**	**3.83**
41.0	3.87	3.42	4.28	3.65	4.58	3.88	4.72	3.88	4.85	3.88	5.14	3.85	5.37	3.78
43.0	3.77	3.32	4.16	3.55	4.45	3.77	4.59	3.77	4.72	3.77	4.99	3.74	5.22	3.68

Trend of Total & Sensible Heat Capacity / Indoor Air & Outdoor Air temperature.

Product models : RAS-24SKHP-ES2 / RAS-24S2AH-ES2

Specification of product at standard condition.

Standard Condition

Indoor	27°CDB / 19°CWB
Outdoor	35°CDB / 24°CWB

Total Cooling Capacity (TC)	6.80 kW
Sensible Heat Capacity (SHC)	5.30 kW

Outdoor air temp. CDB	Indoor air temp. 14.0°CWB 20.0°CDB		16.0°CWB 23.0°CDB		18.0°CWB 26.0°CDB		19.0°CWB 27.0°CDB		20.0°CWB 28.0°CDB		22.0°CWB 30.0°CDB		24.0°CWB 32.0°CDB	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
21.0	6.59	5.54	7.28	5.90	7.79	6.27	8.02	6.25	8.25	6.24	8.74	6.17	9.14	6.04
23.0	6.45	5.42	7.12	5.77	7.62	6.13	7.85	6.12	8.07	6.11	8.55	6.04	8.94	5.91
25.0	6.30	5.30	6.96	5.64	7.45	6.00	7.67	5.98	7.89	5.97	8.36	5.91	8.74	5.78
27.0	6.16	5.17	6.80	5.51	7.28	5.86	7.50	5.84	7.71	5.84	8.17	5.77	8.54	5.65
29.0	6.02	5.05	6.64	5.38	7.11	5.72	7.32	5.71	7.53	5.70	7.98	5.64	8.34	5.52
31.0	5.87	4.93	6.48	5.26	6.94	5.59	7.15	5.57	7.35	5.56	7.79	5.50	8.14	5.39
33.0	5.73	4.81	6.33	5.13	6.78	5.45	6.97	5.44	7.17	5.43	7.60	5.37	7.95	5.25
35.0	5.59	4.69	6.17	5.00	6.61	5.31	6.80	5.30	6.99	5.29	7.41	5.23	7.75	5.12
37.0	5.44	4.57	6.01	4.87	6.44	5.18	6.63	5.16	6.81	5.16	7.22	5.10	7.55	4.99
39.0	5.30	4.45	5.85	4.74	6.27	5.04	6.45	5.03	6.64	5.02	7.03	4.97	7.35	4.86
41.0	5.16	4.33	5.69	4.61	6.10	4.90	6.28	4.89	6.46	4.89	6.84	4.83	7.15	4.73
43.0	5.01	4.21	5.54	4.49	5.93	4.77	6.10	4.76	6.28	4.75	6.65	4.70	6.95	4.60

Part Load Performance

Model : RAS-10SKHP-ES / RAS-10S2AH-ES

Product specification (At 230V) :

Condition		Capacity (kW)	Power (kW)	EER / COP
Cooling	In : 27ºCDb/19ºCWb Out : 35ºCDb/24ºCWb	2.73	0.84	3.25
Heating	In : 20ºCDb/ 15ºCWb Out : 7ºCDb/6ºCWb	2.94	0.81	3.63

Cooling performance characteristic :

Outside Temp(ºC)	Capacity (kW)	Power (kW)	EER (-)
21	3.22	0.67	4.80
22	3.19	0.68	4.66
23	3.15	0.70	4.53
24	3.12	0.71	4.40
25	3.08	0.72	4.28
26	3.05	0.73	4.16
27	3.01	0.74	4.05
28	2.98	0.76	3.94
29	2.94	0.77	3.83
30	2.91	0.78	3.73
31	2.87	0.79	3.62
32	2.84	0.80	3.53
33	2.80	0.82	3.43
34	2.77	0.83	3.34
35	**2.73**	**0.84**	**3.25**
36	2.69	0.85	3.16
37	2.66	0.86	3.08
38	2.62	0.88	3.00
39	2.59	0.89	2.92
40	2.55	0.90	2.84
41	2.52	0.91	2.76
42	2.48	0.92	2.69
43	2.45	0.94	2.62

Heating performance characteristic :

Outside Temp(ºC)	Capacity (kW)	Power (kW)	COP (-)
-15	1.27	0.53	2.38
-10	1.65	0.60	2.77
-9	1.73	0.61	2.83
-8	1.77	0.62	2.87
-7	**1.79**	**0.62**	**2.88**
-6	1.80	0.62	2.89
-5	1.81	0.63	2.89
-4	1.83	0.63	2.90
-3	1.84	0.63	2.91
-2	1.86	0.64	2.92
-1	1.87	0.64	2.93
0	1.88	0.64	2.93
1	1.90	0.64	2.94
2	1.91	0.65	2.95
3	1.93	0.65	2.96
4	1.94	0.65	2.96
5	1.95	0.66	2.97
6	2.86	0.80	3.59
7	**2.94**	**0.81**	**3.63**
8	3.02	0.82	3.67
9	3.09	0.84	3.70
10	3.17	0.85	3.74

Model : RAS-13SKHP-ES2 / RAS-13S2AH-ES2

Product specification (At 230V) :

Condition		Capacity (kW)	Power (kW)	EER / COP
Cooling	In : 27ºCDb/19ºCWb Out : 35ºCDb/24ºCWb	3.75	1.17	3.21
Heating	In : 20ºCDb/ 15ºCWb Out : 7ºCDb/6ºCWb	4.20	1.16	3.62

Cooling performance characteristic :

Outside Temp(ºC)	Capacity (kW)	Power (kW)	EER (-)
21	4.42	0.94	4.73
22	4.38	0.95	4.60
23	4.33	0.97	4.47
24	4.28	0.99	4.34
25	4.23	1.00	4.22
26	4.18	1.02	4.10
27	4.14	1.04	3.99
28	4.09	1.05	3.88
29	4.04	1.07	3.78
30	3.99	1.09	3.67
31	3.94	1.10	3.57
32	3.89	1.12	3.48
33	3.85	1.14	3.38
34	3.80	1.15	3.29
35	**3.75**	**1.17**	**3.21**
36	3.70	1.19	3.12
37	3.65	1.20	3.04
38	3.61	1.22	2.95
39	3.56	1.24	2.88
40	3.51	1.25	2.80
41	3.46	1.27	2.72
42	3.41	1.29	2.65
43	3.37	1.30	2.58

Heating performance characteristic :

Outside Temp(ºC)	Capacity (kW)	Power (kW)	COP (-)
-15	1.82	0.76	2.37
-10	2.36	0.85	2.76
-9	2.47	0.87	2.83
-8	2.53	0.88	2.86
-7	**2.55**	**0.89**	**2.87**
-6	2.57	0.89	2.88
-5	2.59	0.90	2.89
-4	2.61	0.90	2.90
-3	2.63	0.91	2.90
-2	2.65	0.91	2.91
-1	2.67	0.91	2.92
0	2.69	0.92	2.93
1	2.71	0.92	2.93
2	2.73	0.93	2.94
3	2.75	0.93	2.95
4	2.77	0.94	2.96
5	2.79	0.94	2.96
6	4.09	1.22	3.35
7	**4.20**	**1.16**	**3.62**
8	4.31	1.18	3.66
9	4.42	1.20	3.69
10	4.53	1.21	3.73

Model : RAS-18SKHP-ES/RAS-18S2AH-ES

Product specification (At 230V) :

Condition	Capacity (kW)	Power (kW)	EER / COP
Cooling JIS In : 27ºCDb/19ºCWb Out : 35ºCDb/24ºCWb	5.11	1.55	3.30
Heating JIS In : 20ºCDb/ 15ºCWb Out : 7ºCDb/6ºCWb	5.49	1.50	3.66

Cooling performance characteristic :

Outside Temp(ºC)	Capacity (kW)	Power (kW)	EER (-)
21	6.03	1.24	4.87
22	5.96	1.26	4.73
23	5.90	1.28	4.59
24	5.83	1.31	4.47
25	5.77	1.33	4.34
26	5.70	1.35	4.22
27	5.63	1.37	4.11
28	5.57	1.39	3.99
29	5.50	1.42	3.88
30	5.44	1.44	3.78
31	5.37	1.46	3.68
32	5.31	1.48	3.58
33	5.24	1.51	3.48
34	5.18	1.53	3.39
35	**5.11**	**1.55**	**3.30**
36	5.04	1.57	3.21
37	4.98	1.59	3.12
38	4.91	1.62	3.04
39	4.85	1.64	2.96
40	4.78	1.66	2.88
41	4.72	1.68	2.80
42	4.65	1.71	2.73
43	4.59	1.73	2.65

Heating performance characteristic :

Outside Temp(ºC)	Capacity (kW)	Power (kW)	COP (-)
-15	2.37	0.99	2.40
-10	3.08	1.11	2.79
-9	3.22	1.13	2.86
-8	3.31	1.14	2.89
-7	**3.33**	**1.15**	**2.90**
-6	3.36	1.15	2.91
-5	3.39	1.16	2.92
-4	3.41	1.17	2.93
-3	3.44	1.17	2.93
-2	3.46	1.18	2.94
-1	3.49	1.18	2.95
0	3.52	1.19	2.96
1	3.54	1.19	2.97
2	3.57	1.20	2.97
3	3.59	1.21	2.98
4	3.62	1.21	2.99
5	3.65	1.22	3.00
6	5.35	1.48	3.62
7	**5.49**	**1.50**	**3.66**
8	5.63	1.52	3.70
9	5.77	1.55	3.73
10	5.92	1.57	3.77

Model : RAS-24SKHP-ES2/RAS-24S2AH-ES2

Product specification (At 230V) :

Condition	Capacity (kW)	Power (kW)	EER / COP
Cooling JIS In : 27°CDb/19°CWb Out : 35°CDb/24°CWb	6.80	2.05	3.32
Heating JIS In : 20°CDb/ 15°CWb Out : 7°CDb/6°CWb	7.30	1.96	3.72

Cooling performance characteristic :

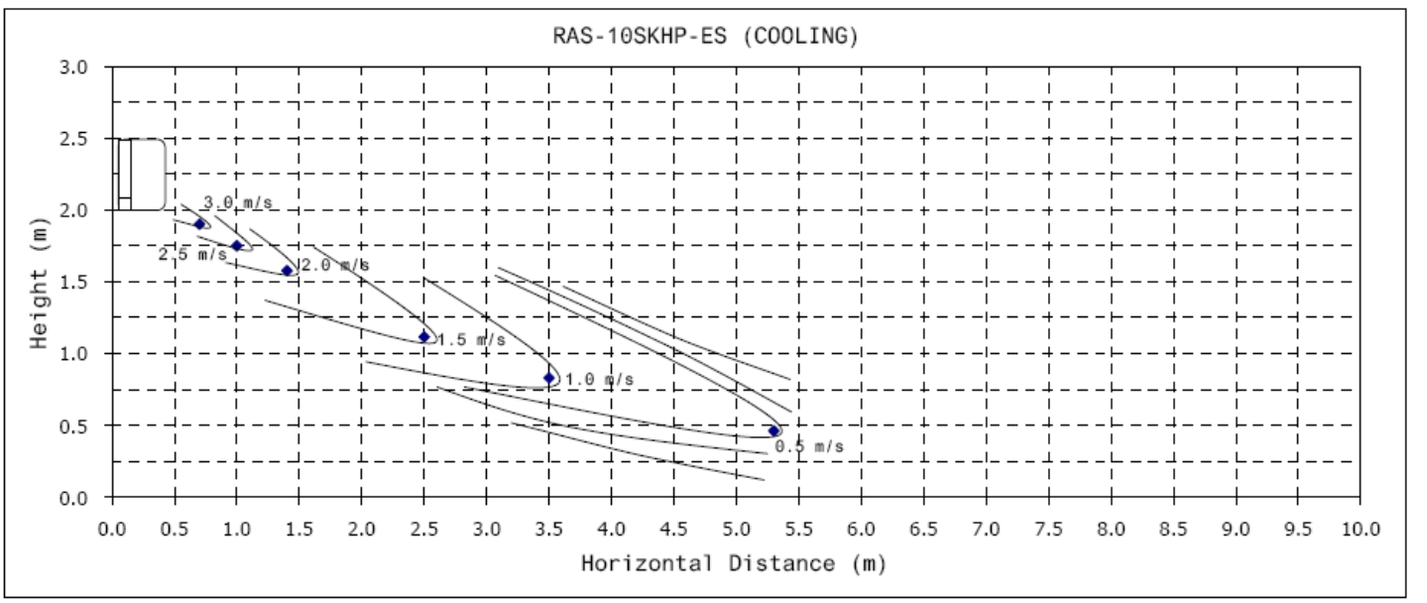
Outside Temp(°C)	Capacity (kW)	Power (kW)	EER (-)
21	8.02	1.64	4.90
22	7.93	1.67	4.76
23	7.85	1.70	4.62
24	7.76	1.73	4.49
25	7.67	1.76	4.37
26	7.59	1.79	4.25
27	7.50	1.81	4.13
28	7.41	1.84	4.02
29	7.32	1.87	3.91
30	7.24	1.90	3.80
31	7.15	1.93	3.70
32	7.06	1.96	3.60
33	6.97	1.99	3.50
34	6.89	2.02	3.41
35	**6.80**	**2.05**	**3.32**
36	6.71	2.08	3.23
37	6.63	2.11	3.14
38	6.54	2.14	3.06
39	6.45	2.17	2.98
40	6.36	2.20	2.90
41	6.28	2.23	2.82
42	6.19	2.26	2.74
43	6.10	2.29	2.67

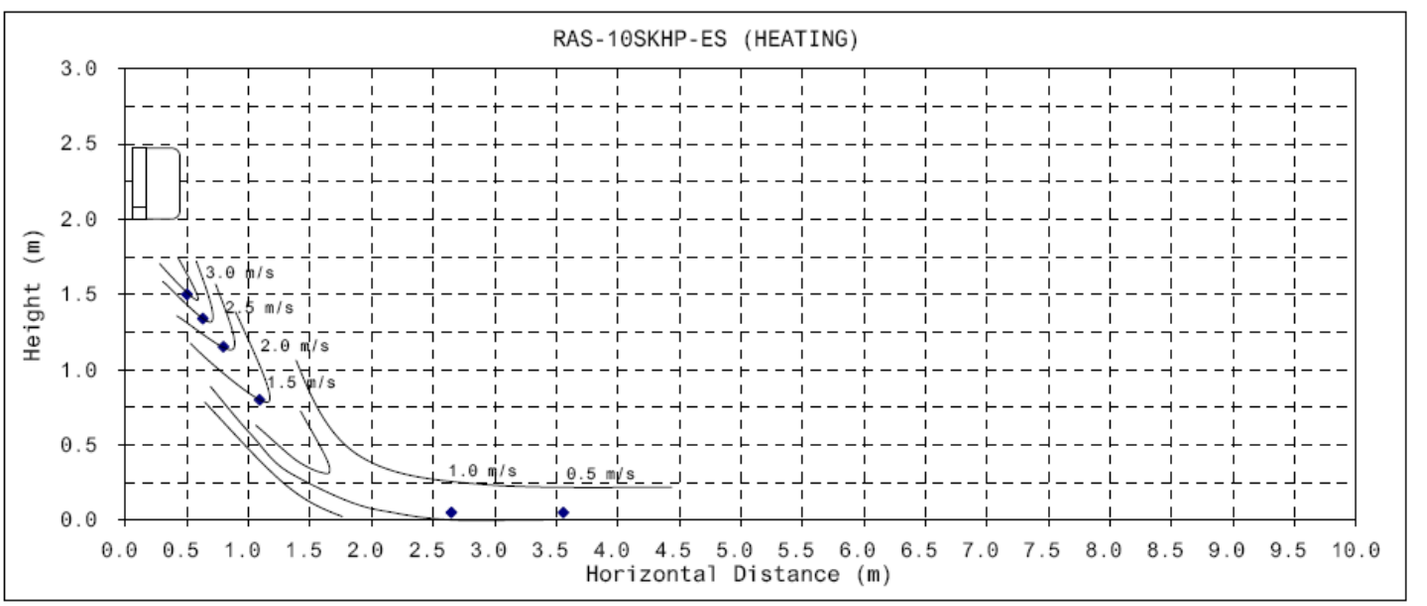
Heating performance characteristic :

Outside Temp(°C)	Capacity (kW)	Power (kW)	COP (-)
-15	3.16	1.29	2.44
-10	4.10	1.44	2.84
-9	4.29	1.47	2.91
-8	4.40	1.49	2.94
-7	**4.43**	**1.50**	**2.95**
-6	4.47	1.51	2.96
-5	4.50	1.52	2.97
-4	4.54	1.52	2.98
-3	4.57	1.53	2.99
-2	4.61	1.54	2.99
-1	4.64	1.55	3.00
0	4.68	1.55	3.01
1	4.71	1.56	3.02
2	4.75	1.57	3.03
3	4.78	1.58	3.03
4	4.81	1.58	3.04
5	4.85	1.59	3.05
6	7.11	1.93	3.69
7	**7.30**	**1.96**	**3.72**
8	7.49	1.99	3.76
9	7.68	2.02	3.80
10	7.87	2.05	3.83

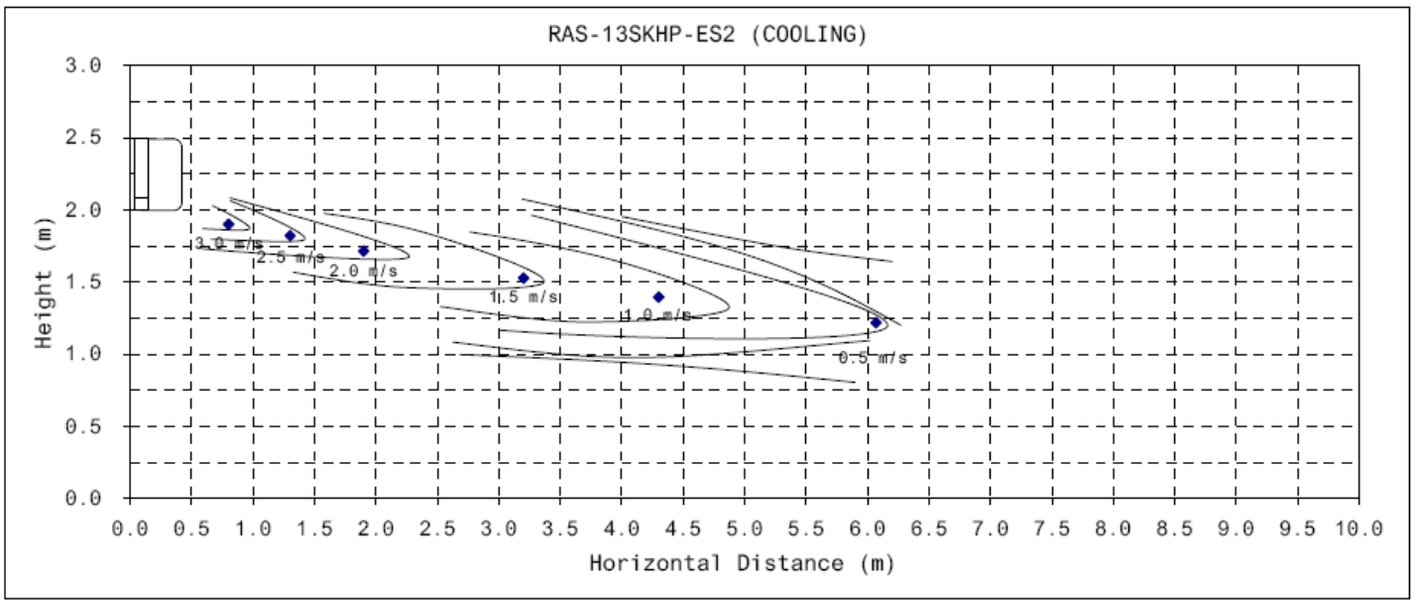
Air Speed Distribution

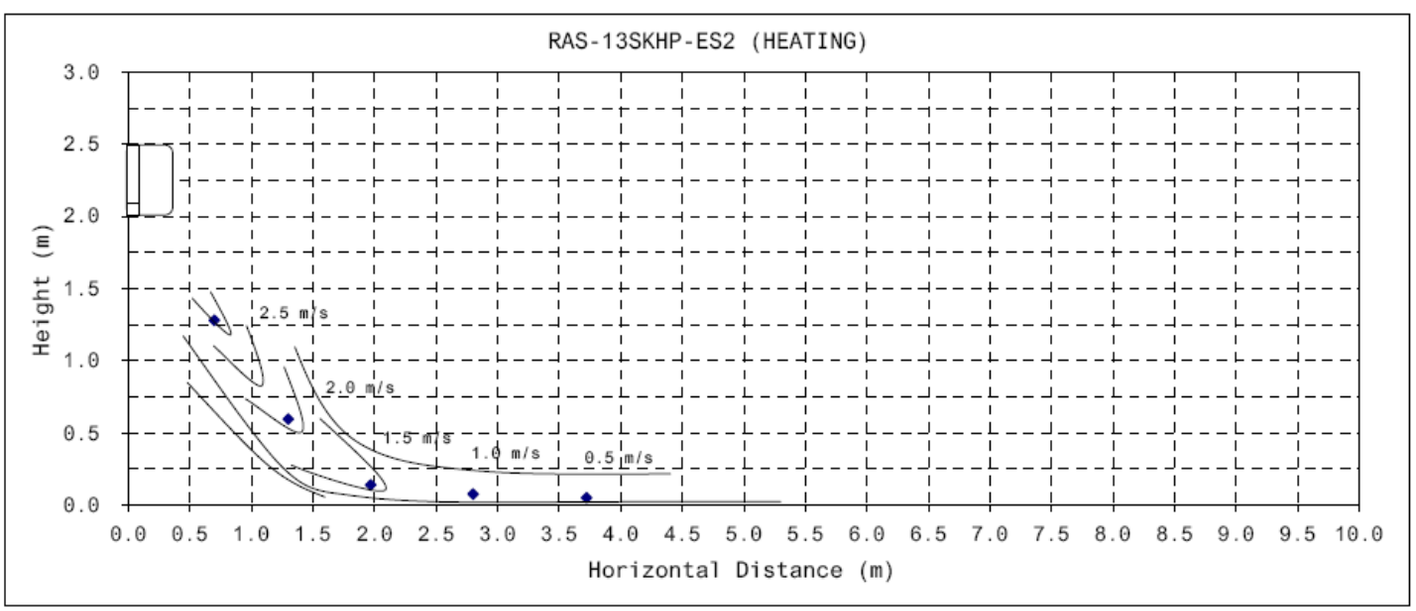
Air distribution





Air distribution





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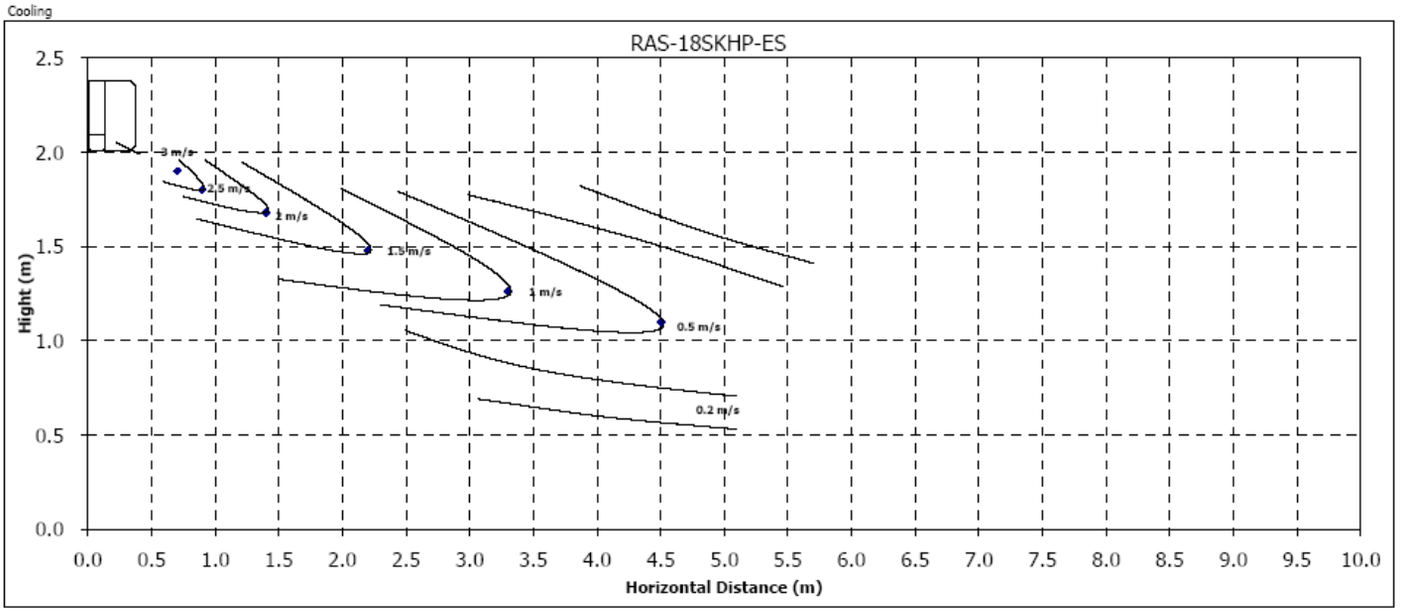
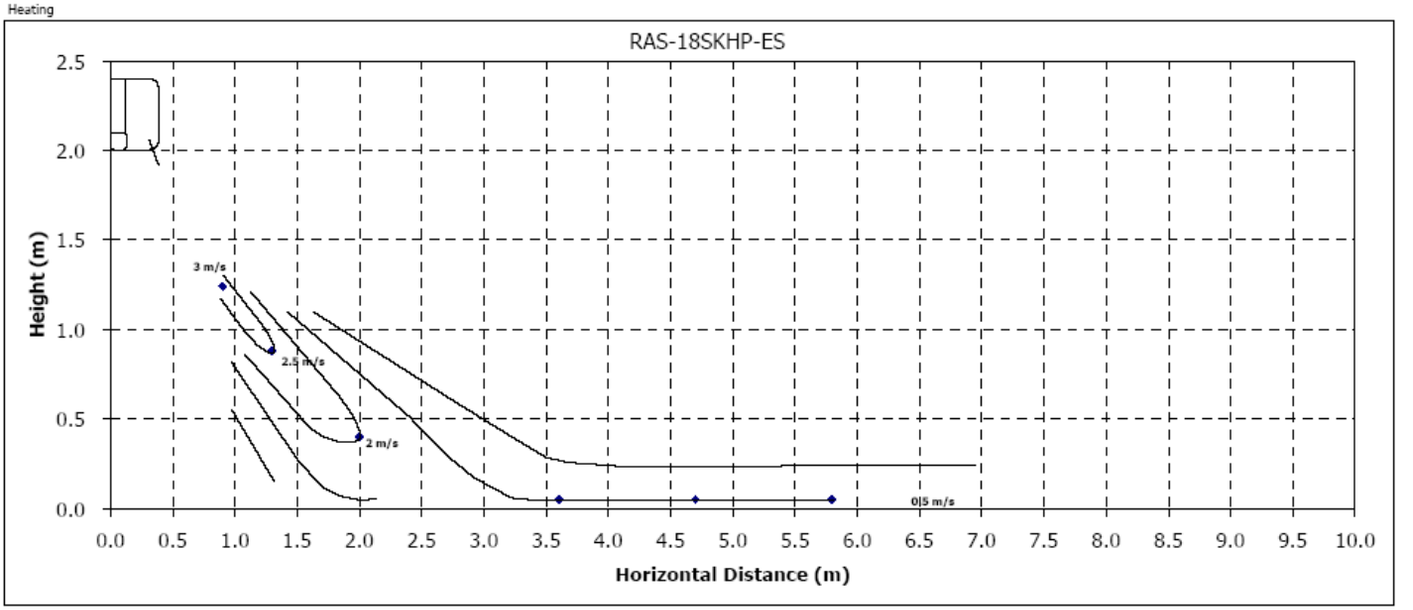
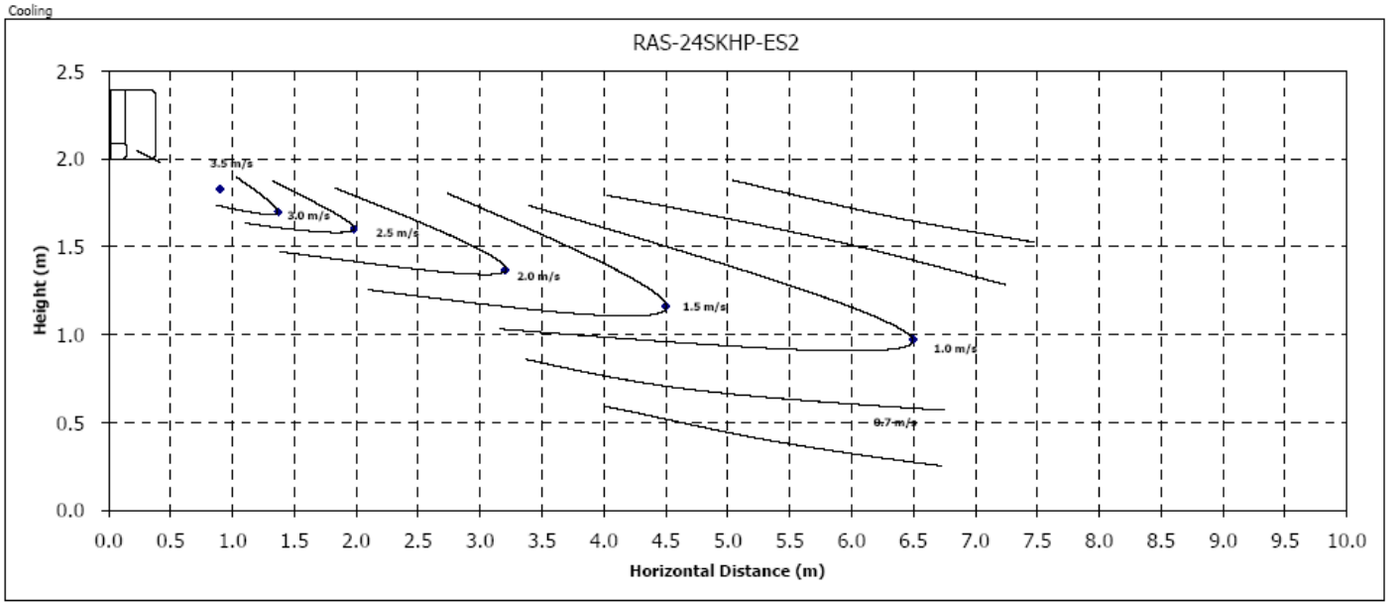


Heating

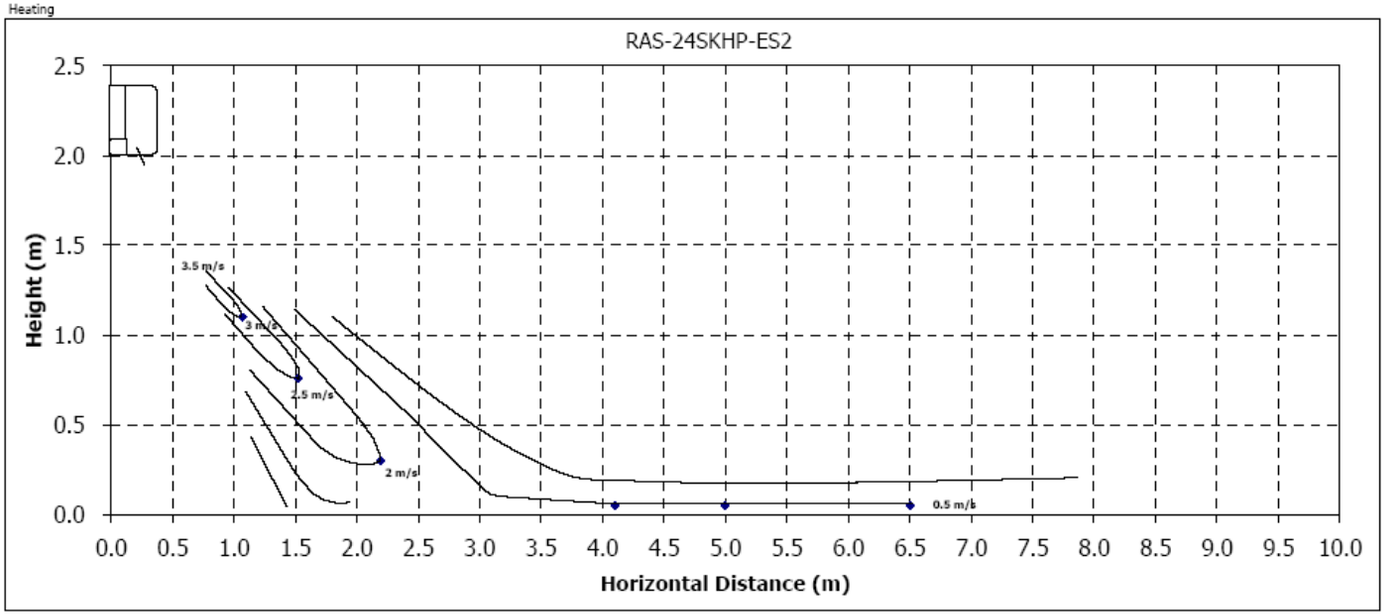


FIXED SPEED: RAS-10, 18SKHP-ES & RAS-13, 24SKHP-ES2

Cooling



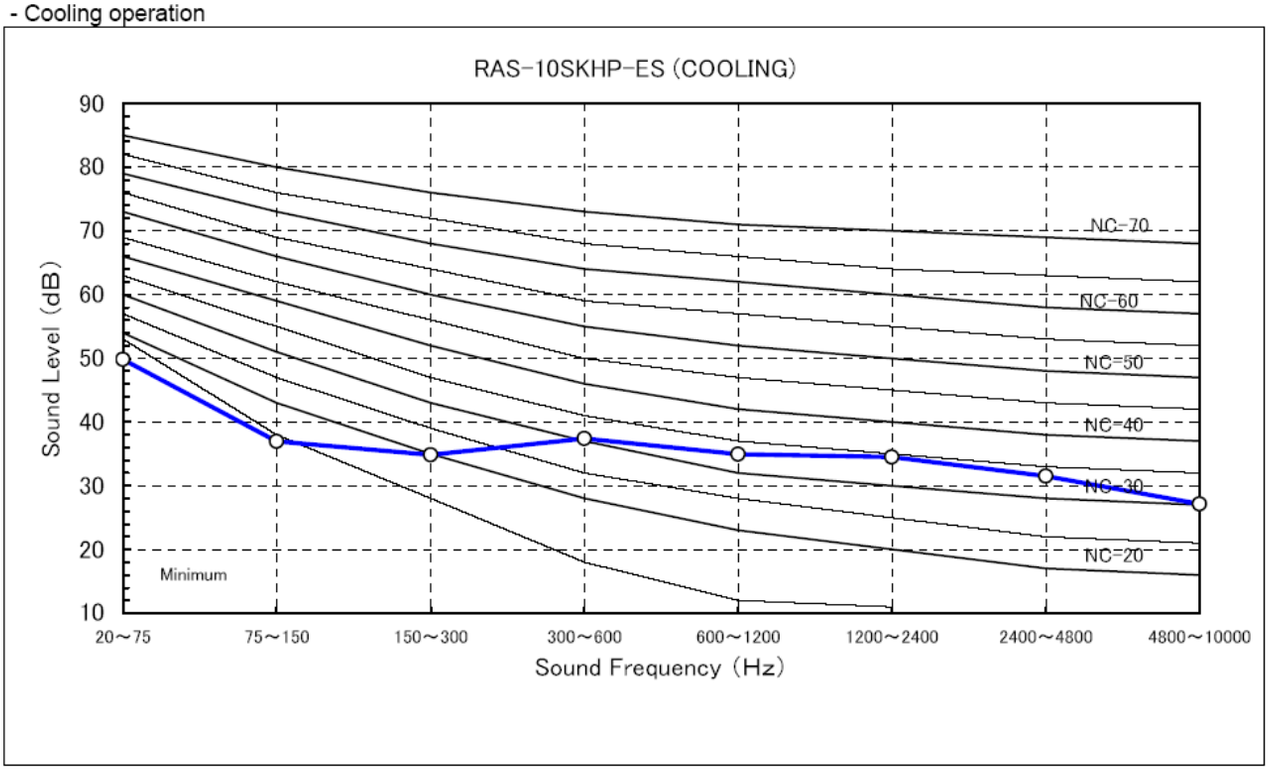
Heating



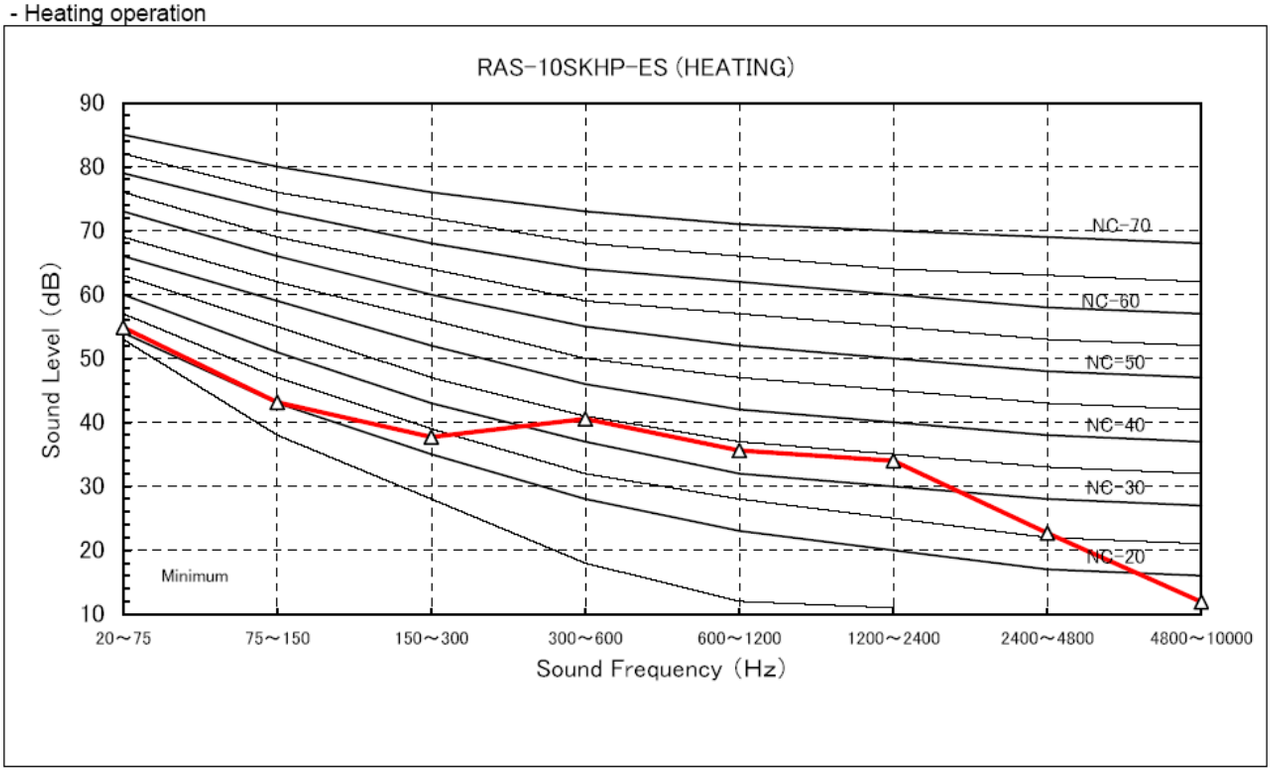
Sound Characteristics (NC Curve)

RAS-10SKHP-ES

- Cooling operation

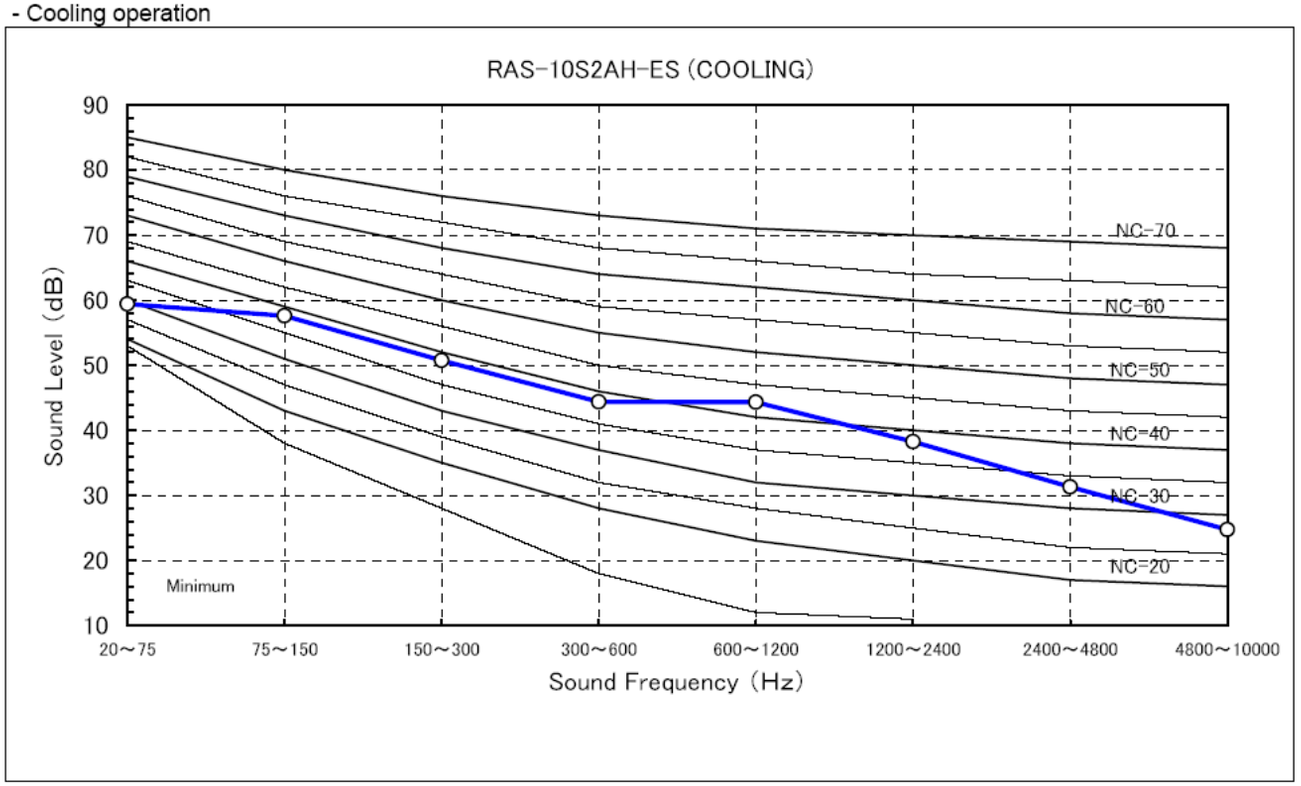


- Heating operation

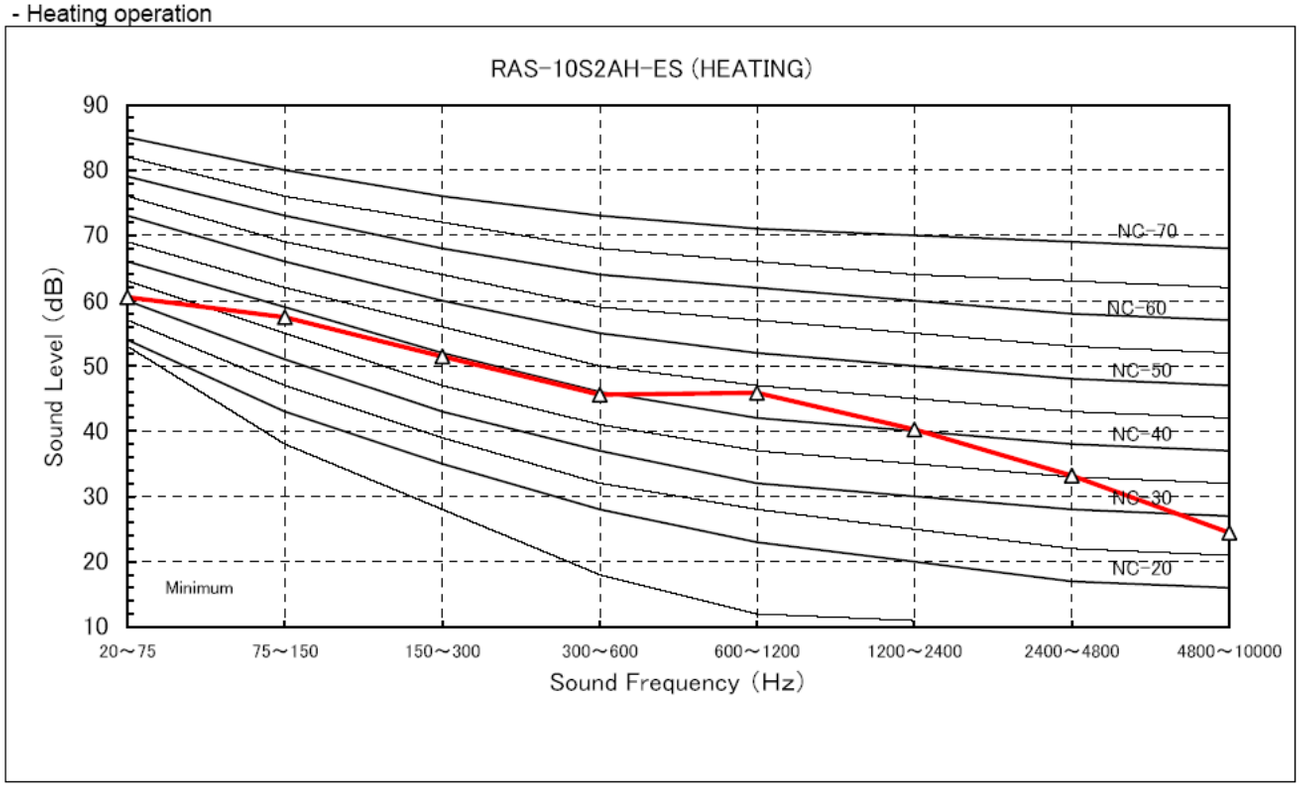


RAS-10S2AH-ES

- Cooling operation

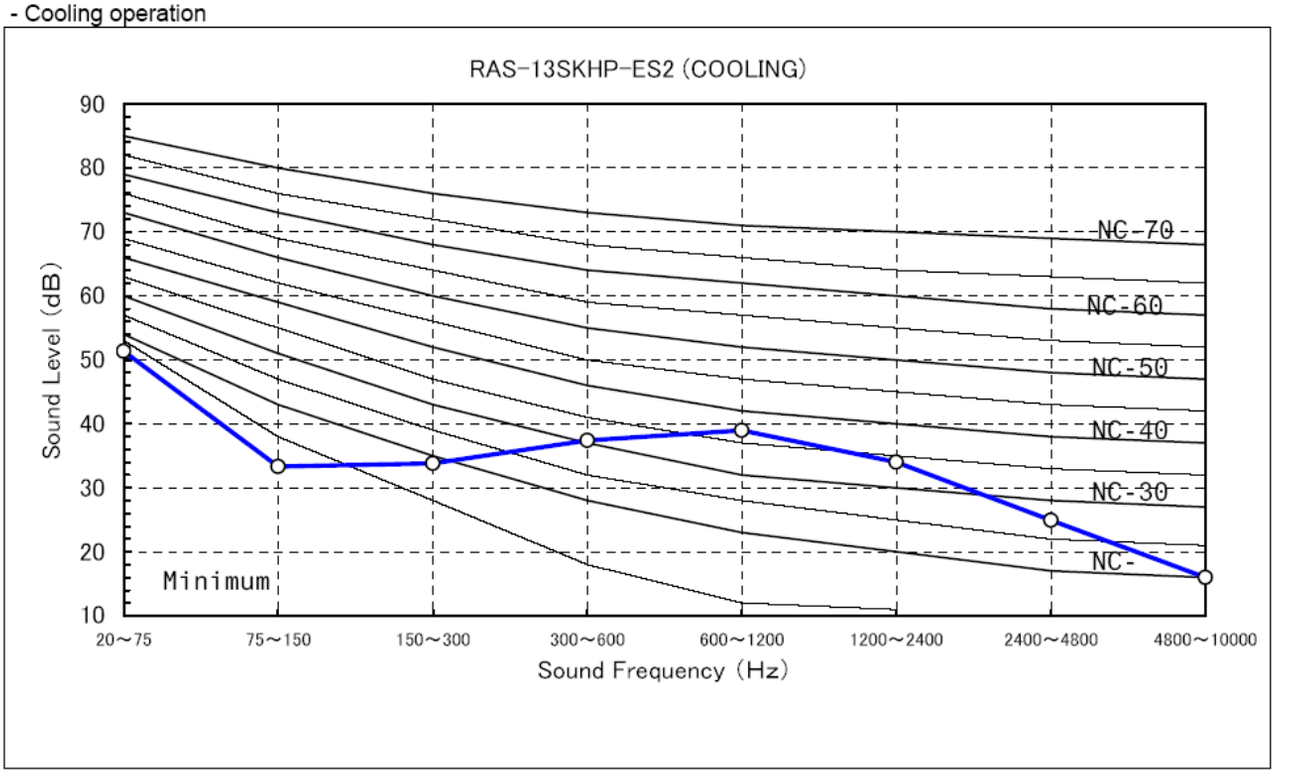


- Heating operation

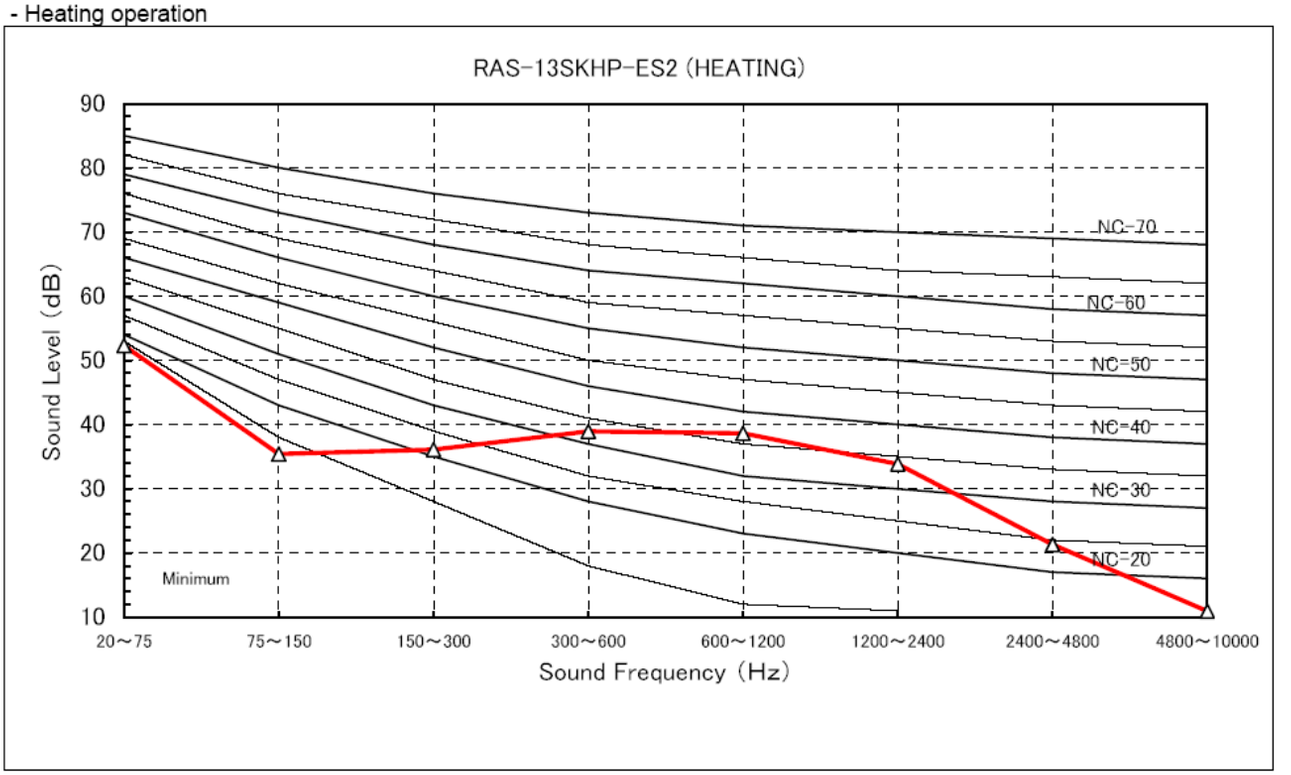


RAS-13SKHP-ES2

- Cooling operation

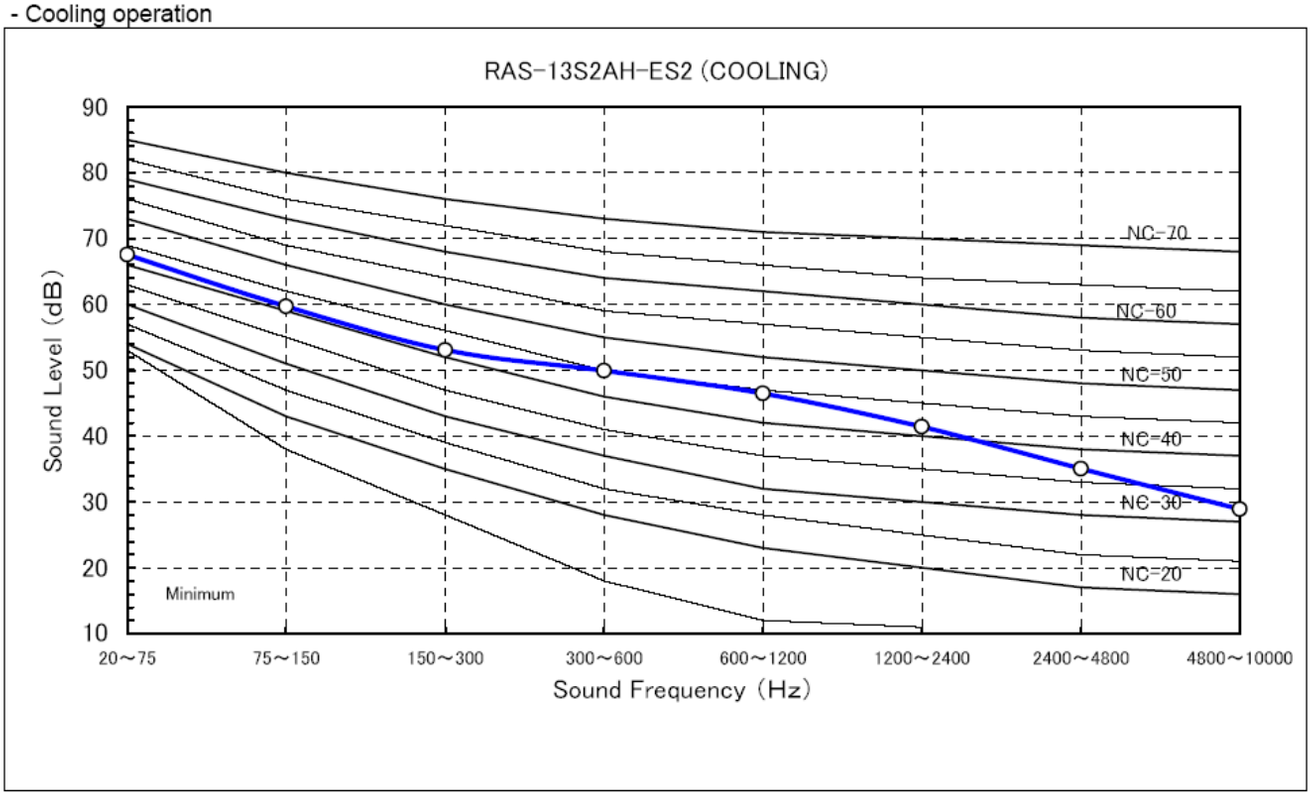


- Heating operation

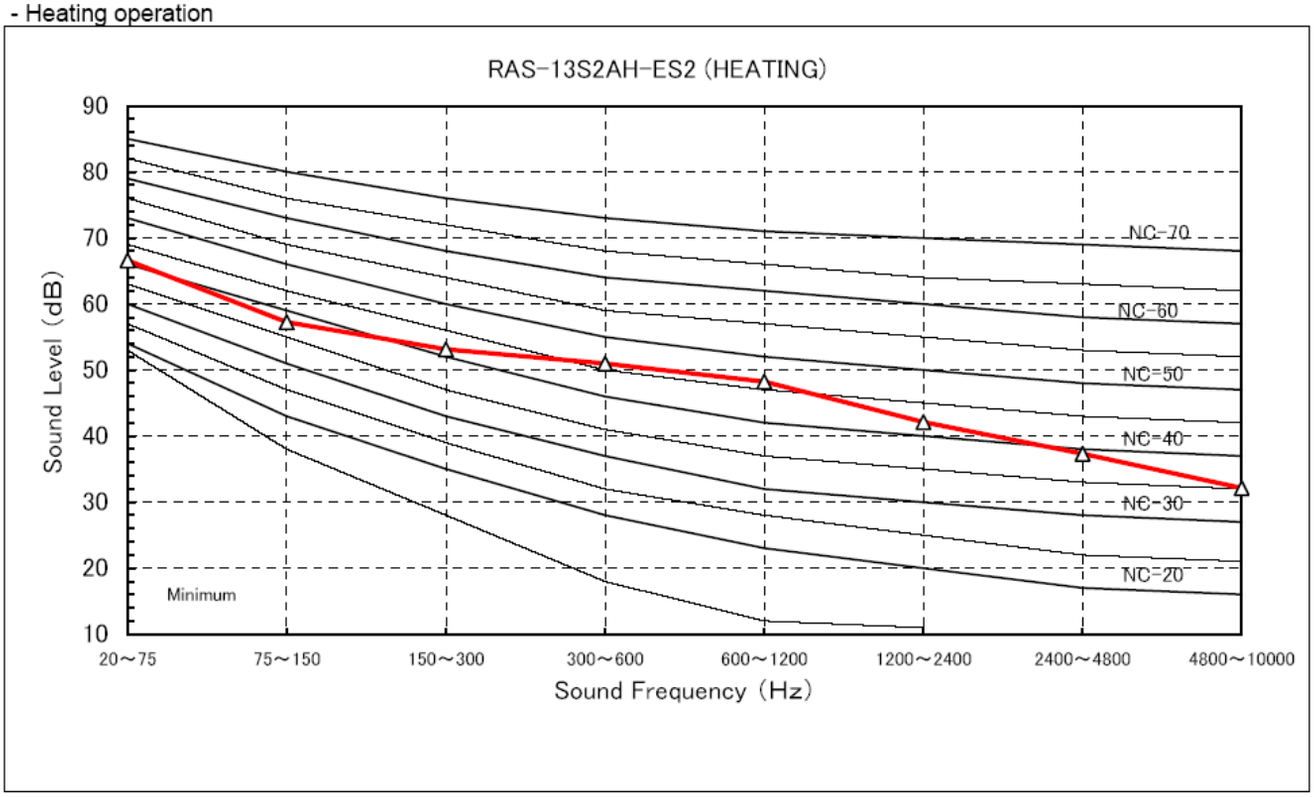


RAS-13S2AH-ES2

- Cooling operation



- Heating operation



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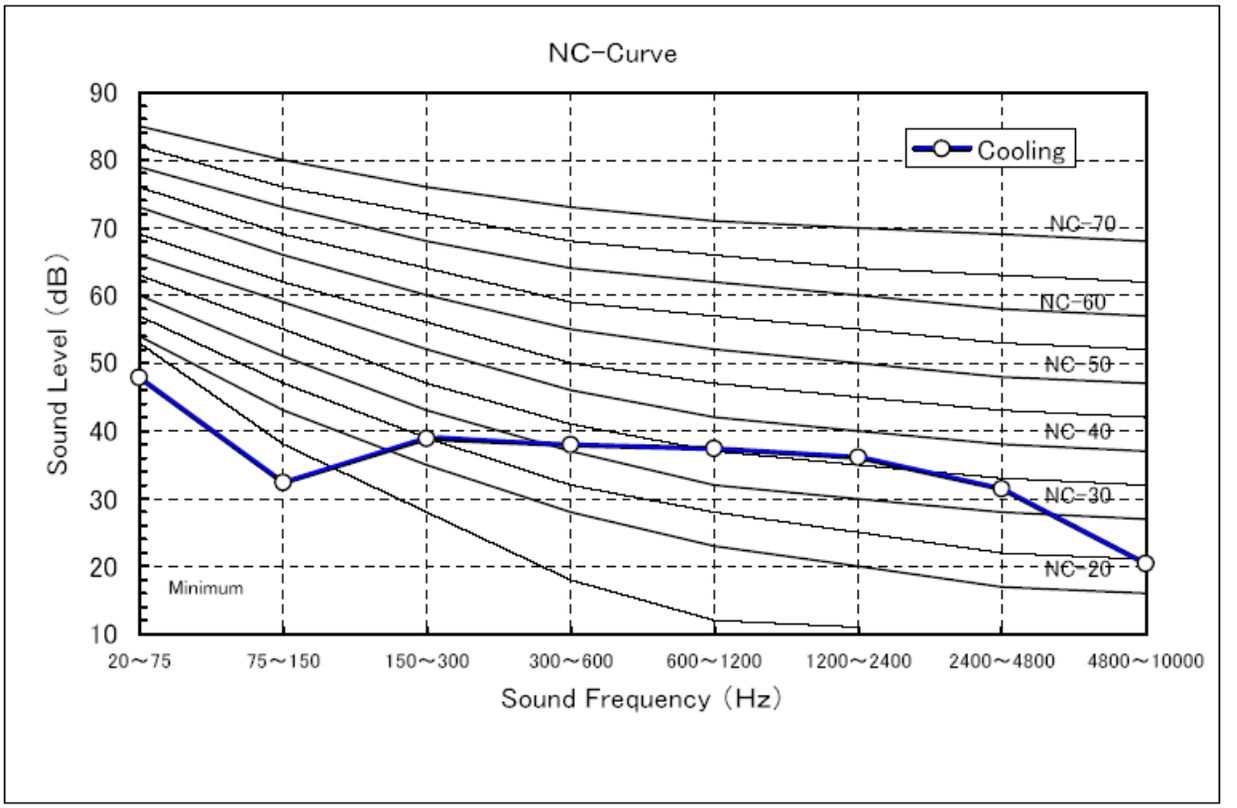

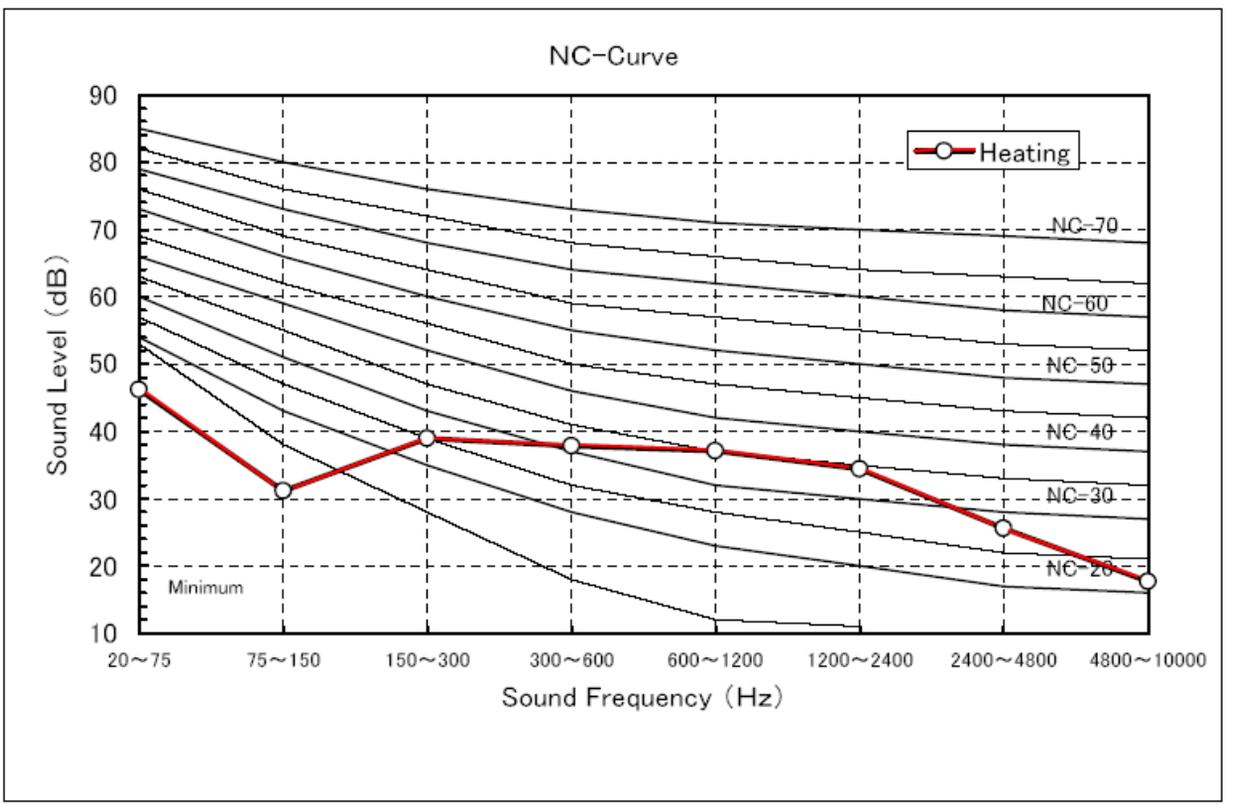

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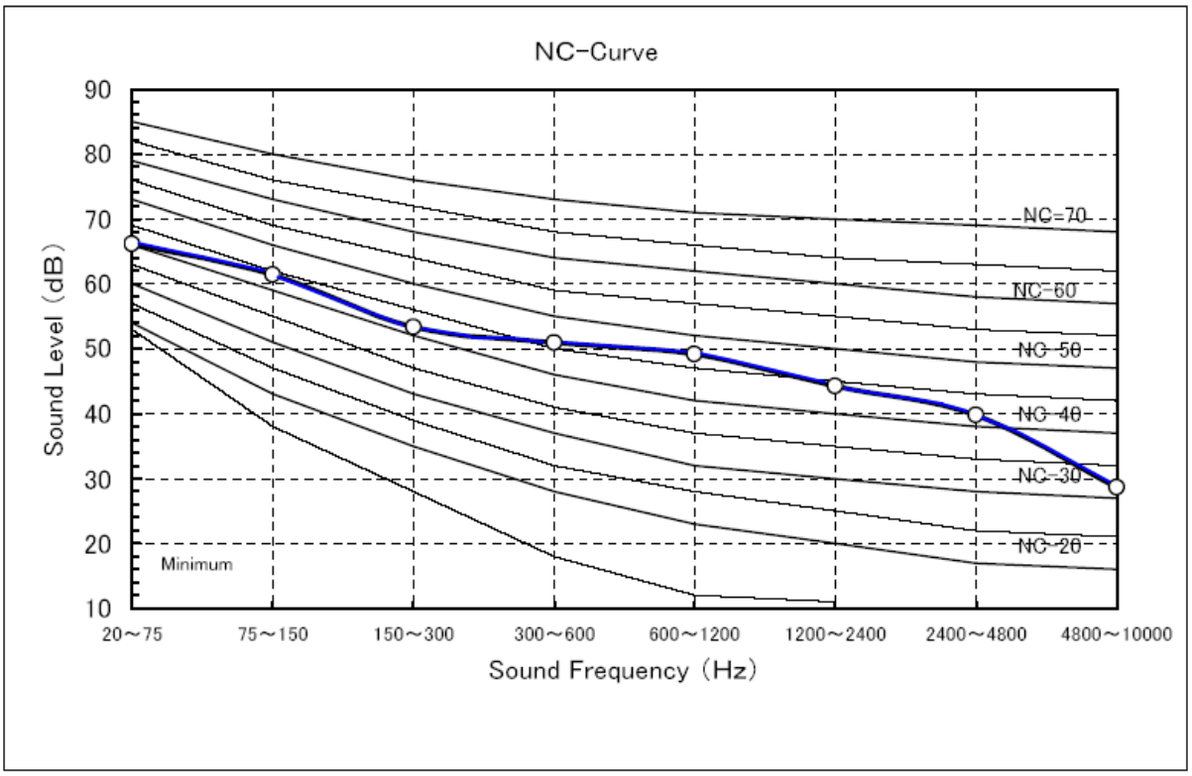

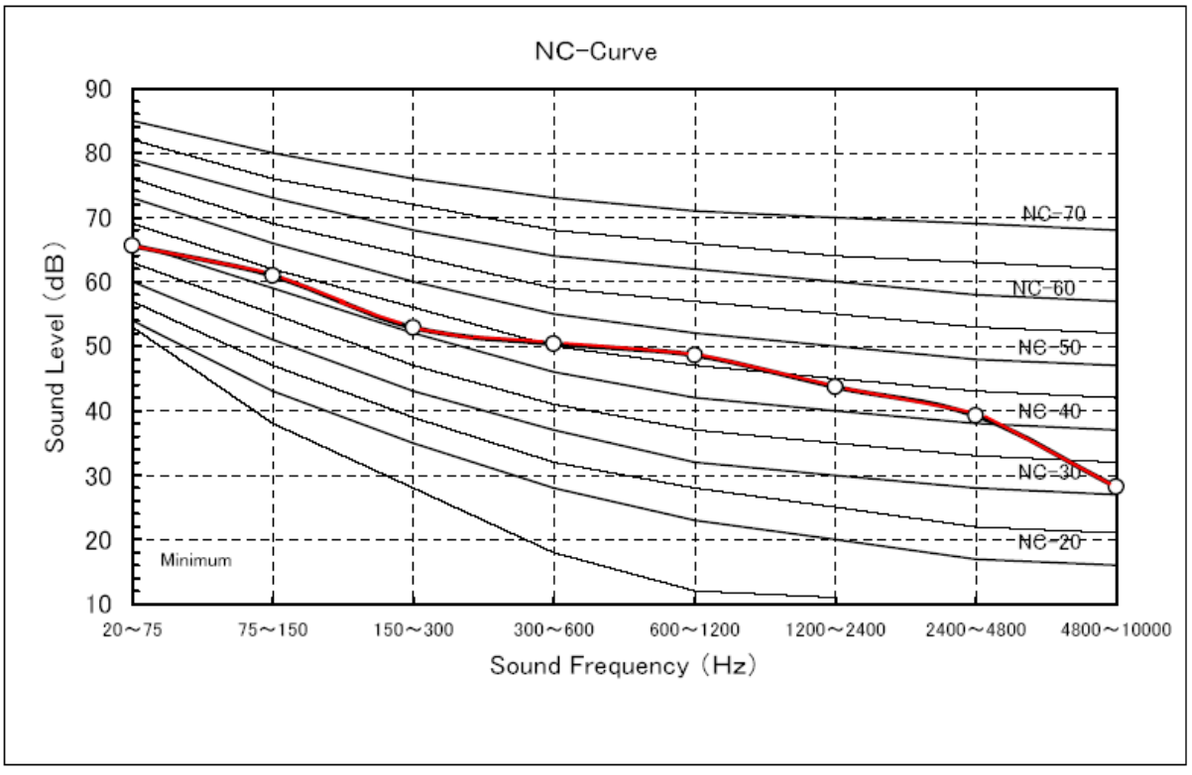

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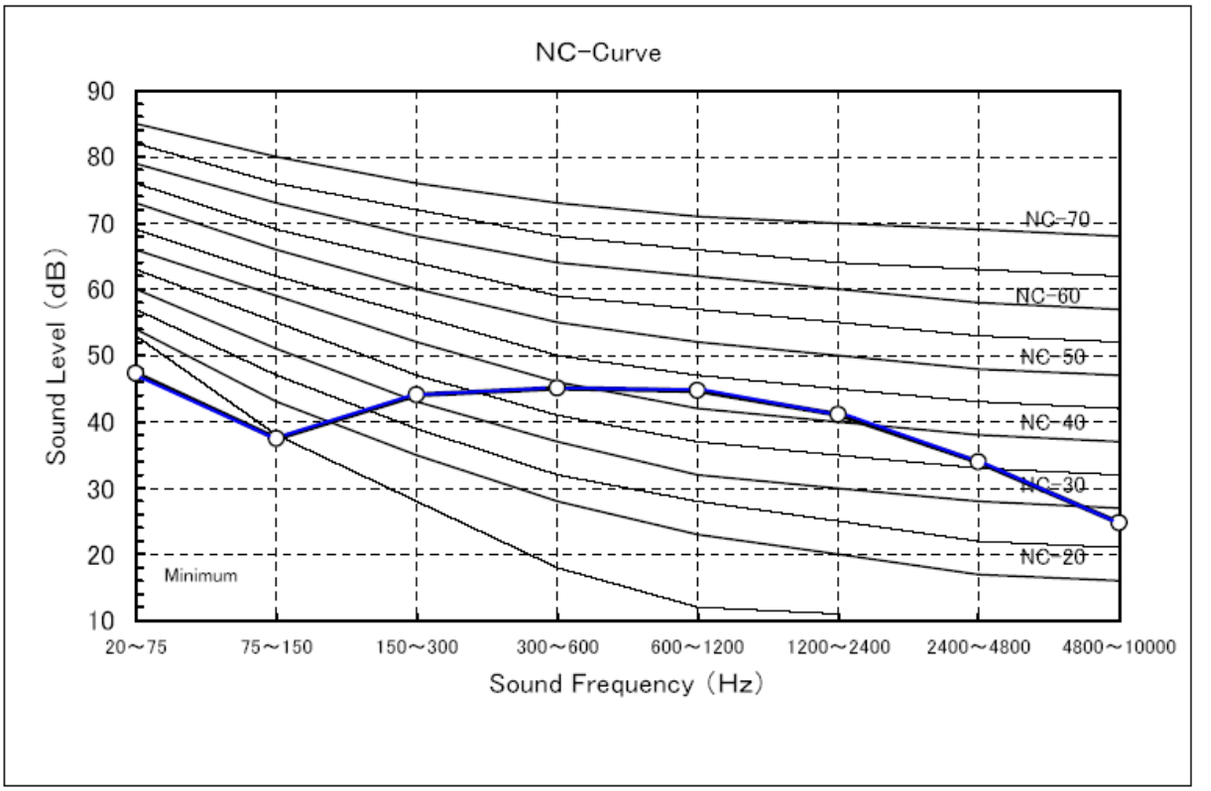

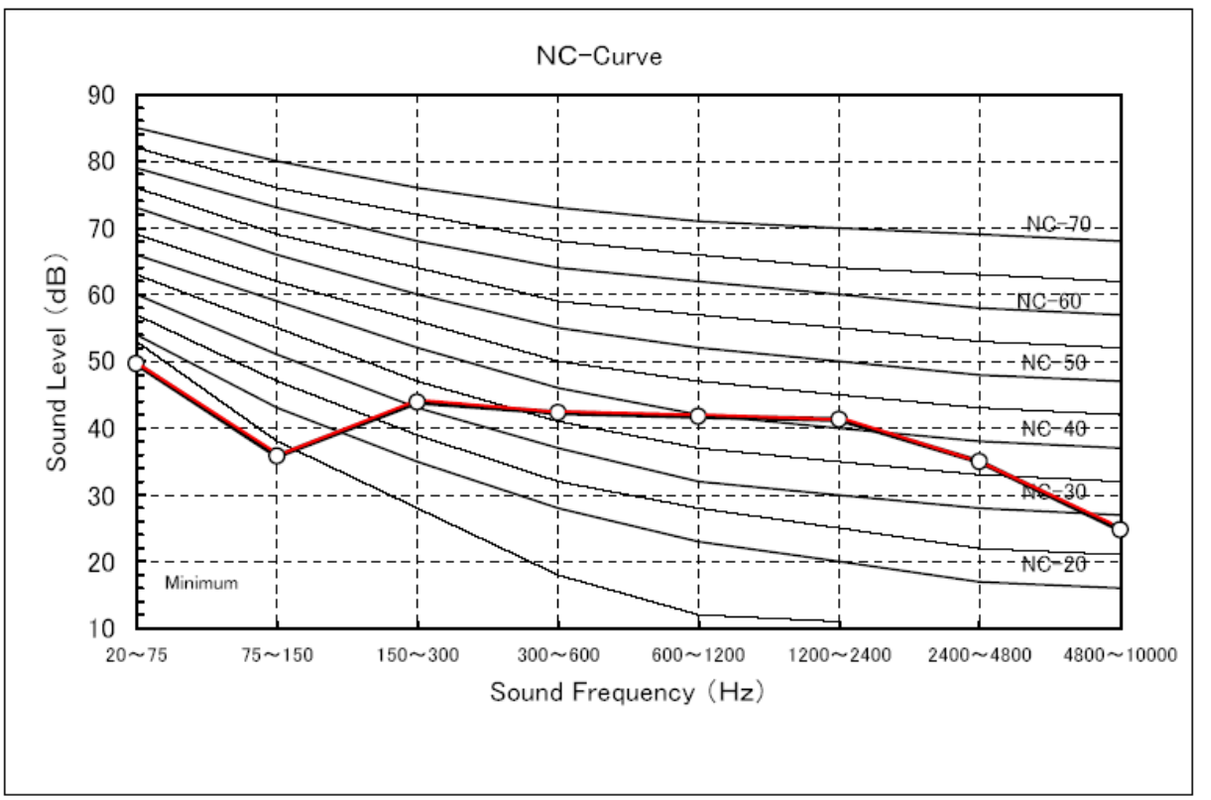

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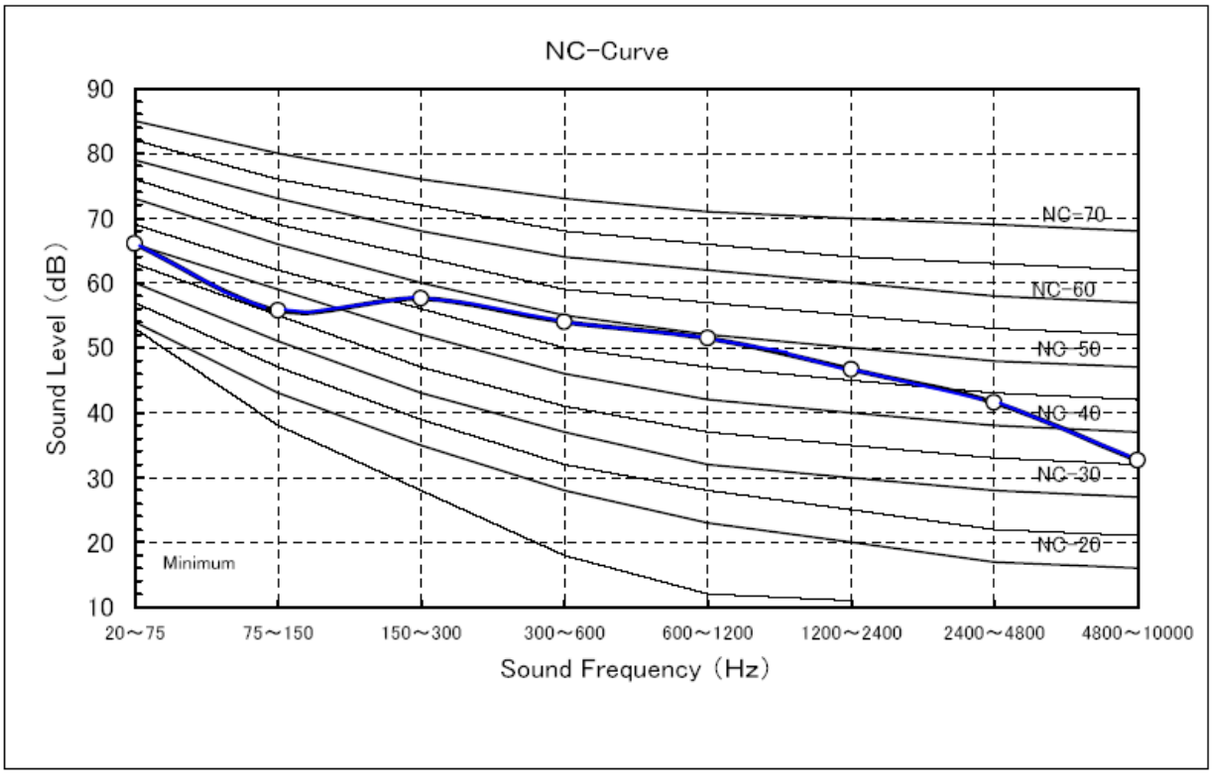

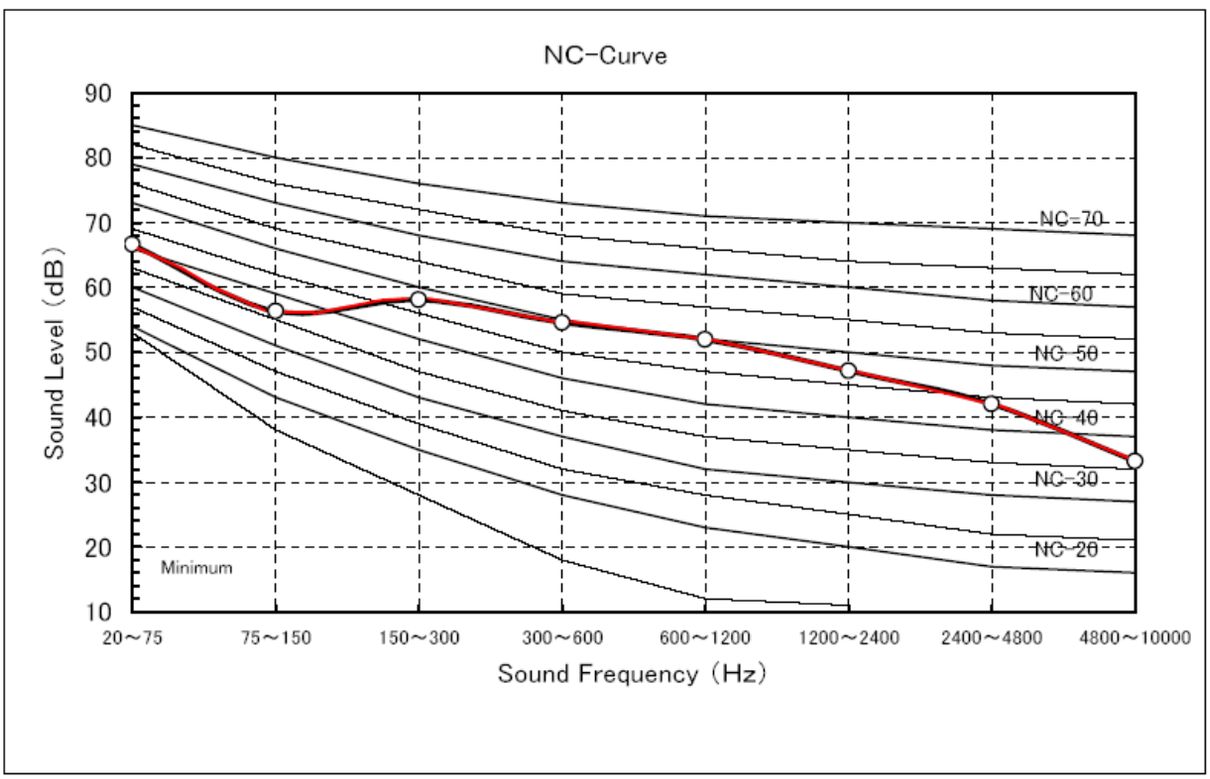

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